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Hearing Ability of Persons by Sociodemographic and Health Characteristics: United States

Data From the National Health Survey
Series 10, No. 140

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VITAL & HEALTH STATISTICS

Hearing Ability of Persons by Sociodemographic and Health Characteristics: United States

Numbers and proportions of persons are estimated according to hearing ability and speech comprehension groups by age, sex, race, years of completed education, family income, usual activity, geographic region, place of residence, limitation of activity due to chronic conditions, annual bed days, number of physician contacts, and respondent-assessed health status. Estimates are based on data collected in household interviews during 1977.

Data From the National Health Survey
Series 10, No. 140

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August 1982

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Cooperation of the U.S. Bureau of the Census

Under the legislation establishing the National Health Interview Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies.

In accordance with specifications established by the Division of Health Interview Statistics, the Bureau of the Census, under a contractual arrangement, participated in planning the survey and collecting the data.

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Symbols Used in Tables

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standards of reliability or precision (more than 30-percent relative standard error)
#	Figure suppressed to comply with confidentiality requirements

Hearing Ability of Persons by Sociodemographic and Health Characteristics

by Peter W. Ries, Division of Health Interview Statistics

Introduction

Hearing trouble is the most prevalent of all impairments. Once every several years, the National Health Interview Survey includes a special supplement to obtain data on the hearing ability of the civilian noninstitutionalized population of the United States. A hearing supplement was included in the 1977 National Health Interview Survey for persons 3 years of age and over. The data were collected for the National Center for Health Statistics in household interviews conducted by the U.S. Bureau of the Census.

This report describes the relationship between different degrees and types of hearing loss and selected sociodemographic and health-related characteristics. Because the same hearing scales were used in the 1971 and 1977 National Health Interview Survey, the results of these two surveys are compared in the final section.

About the time of the 1977 National Health Interview Survey, other National Center for Health Statistics surveys also were used to collect data related to hearing ability or ear problems. These include the Health and Nutrition Examination Survey, with data based on audiological examinations;[1] the National Hospital Discharge Survey, which includes data from hospital records on operations and treatment related to hearing or ear problems;[2] the National Ambulatory Medical Care Survey, containing data received from office-based physicians on the diagnosis and treatment of hearing or ear problems;[3] and the National Nursing Home Survey, which includes estimates of the number of persons in nursing homes who have trouble hearing.[4]

Highlights

- An estimated 14.2 million persons 3 years of age and over had some trouble hearing in one or both ears. Of these, about 7.2 million had hearing trouble in both ears. About 3.2 million of the persons with bilateral hearing trouble had severe hearing problems (that is, they could at best hear and understand shouted speech), and an estimated 367,000 could not hear any speech even if shouted into the better ear.
- Hearing trouble had a very high positive association with age, especially for adults with mild and moderate hearing trouble. About 1 of 10 persons with normal hearing, about 4 of 10 persons with all levels of hearing trouble, and about 6 of 10 persons with severe hearing trouble were 65 years of age or over.
- Males had a higher prevalence rate of hearing trouble than females had. Fifty-seven percent of persons with all levels of hearing trouble and 56 percent of persons with severe hearing trouble were male.
- White persons had a higher prevalence rate of hearing trouble than black persons had. While 12 percent of persons with normal hearing were black, only 7 percent of those with all levels of hearing trouble and 6 percent of persons with severe hearing trouble were black.
- Persons with trouble hearing had less education and smaller annual family incomes than persons with normal hearing had. This relationship was more pronounced for persons with severe hearing trouble than for persons with lesser degrees of hearing trouble.
- Adults with severe hearing trouble were underrepresented among persons whose usual activity was working or going to school. Adults with lesser degrees of hearing trouble were overrepresented among those usually working and underrepresented among adults attending school.
- The prevalence rates for hearing trouble were highest in the South Region of the country and nationwide in areas outside of standard metropolitan statistical areas.
- Persons with trouble hearing had proportionately more annual bed days because of health problems, more annual doctor visits, and greater limitation of activity due to chronic conditions than persons with normal hearing had. This relationship holds across the entire age span and within specific age groups.
- The prevalence rates of all levels of hearing trouble were similar in 1971 and 1977 (69.0 and 70.2 persons per 1,000 persons 3 years of age and over, respectively). However, the prevalence rate for persons with severe hearing trouble increased from 12.8 per 1,000 to 15.5 during this period. The increase was statistically significant only for the 45 years and over age group.

Sources and limitations of the data

The information in this report is based on data collected in a continuing nationwide sample survey conducted by household interview. Each week interviewers visit a probability sample of households in the United States to obtain information about health-related characteristics of each member of the household. During the 52 weeks in 1977, interviews were conducted in approximately 41,000 households containing about 111,000 persons. The total noninterview rate was 3.3 percent, of which 57 percent (1.9 percent of the total) was due to respondent refusal and the remainder to the failure to find an eligible respondent at home after repeated calls.

Estimates of the hearing-impaired population were derived from questions 32a, items A and B, and 33a, item 3, on the questionnaire (figure 1). All persons for whom a "yes" response was given to any one of the questions "Does anyone in the family now have deafness in one or both ears?" "Does anyone in the family now have any other trouble hearing with one or both ears?" and "Does anyone in the family use a hearing aid?" were recorded as individuals with hearing problems. The series of questions reproduced in figure 2 was asked for all such persons. The flashcard shown in figure 3 was used in administering questions 2a and 2b.

Questions 2a and 2b constitute the "self-rating hearing scale"; questions 3a through 3g are the "Gallaudet scale." For background concerning the development of these scales and references relating to their validity see references 5 and 6.

Because of the nature of the hearing-scale questions and the obvious difficulty in eliciting valid responses to these questions for children under 3 years of age, the scale was administered only for persons 3 years of age and over. Since proxy responses from eligible family respondents were accepted, reference 7 also should be consulted. This publication addresses the issue of the reporting of hearing ability by self- and proxy respondents. In 1977 about 75 percent of the responses to the two hearing scales were received either from adult self-respondents or from adult family members responding for the children residing in the household.

In this report, estimates of the hearing-impaired population exclude persons who did not report a hearing problem but indicated that they had tinnitus. Reference 8 provides a discussion of the approximately 16.2 million persons reported to have a hearing problem, tinnitus, or both.

A description of the design of the survey, the methods used in estimations, and general qualifications of the data obtained from the survey are presented in appendix I. Because the estimates shown in this report are based on a sample of the population rather than on the entire population, they are subject to sampling error. Therefore, particular attention should be paid to the section "Reliability of estimates." When a given estimate of the numerator of a rate or percentage is small, the sampling error may be relatively high. Cells containing estimates with relative standard errors of more than 30 percent (noted by asterisks) have been provided solely for the purpose of allowing readers to combine cells in useful groupings with greater reliability. Charts of relative sampling errors and instructions for their use are given in appendix I.

Certain terms used in this report are defined in appendix II. As many of these terms have specialized meanings for the purpose of this survey, familiarity with these definitions will assist in the interpretation of the data. Appendix III contains the parts of the questionnaire from which the estimates shown in this report were derived.

32a. Does anyone in the family (you, your --, etc.) NOW have – If "Yes," ask 32b and c **b. Who is this?** – Enter name of condition and letter of line where reported in appropriate person's column in item C. **c. Does anyone else have . . . ?**	**A. Deafness in one or both ears?**	
	B. Any other trouble hearing with one or both ears?	
	C. Tinnitus or ringing in the ears?	
	D. Blindness in one or both eyes?	
	E. Cataracts?	
	F. Glaucoma?	
	G. Color blindness?	
33a. Does anyone in the family use – If "Yes," ask 33b and c **b. Who is this?** Mark box in person's column **c. Anyone else?**	**1. Eyeglasses?**	
	2. Contact lenses?	
	3. A hearing aid?	
	For "hearing aid," with no hearing problem reported, enter "33, (B), hearing trouble," in item C2	

Figure 1. Questions from which estimates of persons with hearing trouble were derived

HEARING SUPPLEMENT	R1	☐ No Hearing Problem *(NP)* ☐ A, B, or 33 in C2 *(1–3)*
1. Has -- ever used a hearing aid?	1.	1 Y 2 N
(Hand Card H) **Please look at this card –** **2a. Which statement best describes --'s hearing in his LEFT ear (without a hearing aid)?**	2a.	Good 1☐ Little trouble 2☐ A lot of trouble 3☐ Deaf 4☐
b. Which statement best describes --'s hearing in his RIGHT ear (without a hearing aid)?	b.	1☐ 2☐ 3☐ 4☐
If age 3+, ask: **3a. (Without a hearing aid) Can -- usually HEAR AND UNDERSTAND what a person says without seeing his face if that person WHISPERS to him from across a quiet room?**	3a.	☐ Under 3 *(R2)* 1 Y *(R2)* 2 N
b. (Without a hearing aid) Can -- usually HEAR AND UNDERSTAND what a person says without seeing his face if that person TALKS IN A NORMAL VOICE to him from across a quiet room?	b.	1 Y *(R2)* 2 N
c. (Without a hearing aid) Can -- usually HEAR AND UNDERSTAND what a person says without seeing his face if that person SHOUTS to him from across a quiet room?	c.	1 Y *(R2)* 2 N
d. (Without a hearing aid) Can -- usually HEAR AND UNDERSTAND a person if that person SPEAKS LOUDLY into his better ear?	d.	1 Y *(R2* 2 N
e. (Without a hearing aid) Can -- usually tell the sound of speech from other sounds and noises?	e.	1 Y *(R2)* 2 N
f. (Without a hearing aid) Can -- usually tell one kind of noise from another?	f.	1 Y *(R2)* 2 N
g. (Without a hearing aid) Can -- hear loud noises?	g.	1 Y 2 N
R2 Q.'s 1–3 — For persons 17 years old or over, show who responded for (or was present during the asking of) Q.'s 1–3. If persons responded for self, show whether entirely or partly. For persons under 17, show who responded for them.	R2	1☐ Responded for self-entirely 2☐ Responded for self-partly Person___was respondent

Figure 2. Questions asked of respondents who indicated hearing trouble in question 32

Kinds and types of hearing trouble

Although persons were rated on the two hearing scales discussed above, the estimates presented in this report are not shown separately for each scale. Rather, the results for each scale are combined to form a composite system of classification according to degree and type of hearing loss. The cross-classifications and the composite categories that serve as the basis for presenting the data are shown in table A.

The numerical column headings of table A indicate a person's score on the Gallaudet scale. As noted in figure 2, interviewers were instructed to ask the questions on the Gallaudet scale only until they received a "yes" response. This procedure implies the assumption of a unidimensional scale, with the inference that in the great preponderance of cases once a "yes" was obtained, all subsequent items would be answered affirmatively. Thus each person is classified according to the number of the item for which an affirmative response was obtained. For instance, persons who scored 3 indicated that they usually could *not* hear and understand what a person said without seeing his face if that person whispered (item 1) or talked in a normal voice (item 2) from across a quiet room, but that they could hear and understand the speech if it was shouted from across a quiet room (item 3). As the scale consists of seven items, the score 8 indicates that the respondent answered "no" to all seven items.

The self-rating scale consists of four ratings for each ear (figure 3), making 10 possible combinations of responses when the distinction between right and left ear is ignored. If the rating of 1 equals "hearing is good," 2 "little trouble hearing," 3 "lot of trouble hearing," and 4 "deaf," the 10 possible scores are 1-1, 1-2, 1-3, 1-4, 2-2, 2-3, 2-4, 3-3, 3-4, and 4-4. In table A persons with a score of 1-1 are classified as "hearing good in both ears"; persons with scores of 1 for either ear and 2, 3, or 4 for the other ear are classified as "unilateral hearing loss." All other persons are classified as having bilateral hearing trouble. Those with scores of 4-4 are classified as "deaf, both ears"; those with scores of 3-3 or 3-4 as "at best, a lot of trouble hearing in both ears"; and those with scores of 2-2, 2-3, or 2-4 as "at least some trouble hearing in both ears."

Table A. Number of persons 3 years of age and over for whom hearing trouble was reported, by their Gallaudet Hearing Scale score and self-rating scale status: United States, 1977

Self-rating scale status	*All scale scores*	*Gallaudet Hearing Scale score*								
		8	*7*	*6*	*5*	*4*	*3*	*2*	*1*	*Unknown*
	Number of persons in thousands									
All scale statuses	14,240	167	99	*16	104	534	3,200	6,483	3,381	256
Bilateral hearing trouble	7,208	163	94	*16	94	475	2,310	3,225	759	71
Deaf, both ears	292	121	43	*4	*31	35	49	*5	*-	*4
At best, a lot of trouble hearing in both ears	1,649	40	51	*12	59	300	866	265	36	*20
At least some trouble hearing in both ears	5,267	*2	*-	*-	*3	141	1,395	2,955	723	48
Unilateral hearing loss	5,969	*2	*5	*-	*5	57	803	2,856	2,161	79
Hearing good in both ears	614	*-	*-	*-	*-	*-	*18	187	382	*28
Unknown	449	*2	*-	*-	*5	*2	69	214	79	78

CARD H

Which statement best describes your hearing in your LEFT ear (without a hearing aid)?

1. HEARING IS GOOD
2. LITTLE TROUBLE HEARING
3. LOT OF TROUBLE HEARING
4. DEAF

H

Which statement best describes your hearing in your RIGHT ear (without a hearing aid)?

1. HEARING IS GOOD
2. LITTLE TROUBLE HEARING
3. LOT OF TROUBLE HEARING
4. DEAF

Figure 3. Questions on Card H, shown to respondent to determine responses to questions 2a and 2b

Table A shows the frequencies for each composite score, and enclosures indicate the cells that have been combined to produce the categories of hearing trouble according to which the data on hearing ability will be discussed in this report. Table B shows the total number of persons represented for these combinations of cells, as well as for the total civilian noninstitutionalized population 3 years of age and over, and for the persons in the population who reported no hearing trouble. All of the detailed tables in this report contain the column headings shown in table B.

There are two readily apparent problems in using the composite categories defined in table A; these both relate to the last column in table B ("Hearing trouble: Borderline or unclear whether unilateral or bilateral"), which is the sum of the last two rows of table A minus the 78,000 persons for whom both scale scores were unknown.

First, 614,000 persons who classified their hearing as "good" in both ears are included among the approximately 14.2 million persons defined as having trouble hearing because they indicated some level of hearing trouble or the use of a hearing aid on the screener questions (figure 1) and so probably had some type of minimal hearing trouble.

Second, because about 449,000 persons did not respond to the self-rating scale, they cannot be classified in terms of the major analytic distinction between unilateral and bilateral hearing trouble. Technically, these persons should appear in a separate category, "unclear whether unilateral or bilateral hearing trouble." However, because the Gallaudet scale scores show that the vast majority of these persons have at most a minor hearing loss (79 percent can hear and understand whispered speech), and because their total number is small, the data for these persons have been combined with those of the persons discussed above who rated their hearing "good" in both ears and are shown in all detailed tables as a single category labeled "Hearing trouble: Borderline or unclear whether unilateral or bilateral."

Table B. Number of persons 3 years of age and over, by hearing ability and levels and types of hearing trouble: United States, 1977

All persons 3 years of age and over	*Hearing ability*							
	No hearing trouble	*Hearing trouble*						
		All levels of hearing trouble[1]	*Bilateral hearing trouble*				*Unilateral hearing trouble, all levels*	*Hearing trouble borderline or unclear whether unilateral or bilateral*
			All speech comprehension statuses[2]	*At best, can hear words shouted in ear*	*Can hear words shouted across a room*	*Can hear words spoken in a normal voice*		
Number of persons in thousands								
202,936	188,696	14,240	7,208	842	2,310	3,984	5,969	985

[1] Includes 78,221 persons who did not respond to either hearing scale.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Presentation of the results

The discussion of the results of the survey is limited to comparisons of three hearing ability groups: (1) persons with normal hearing, (2) persons with all degrees and types of hearing loss, and (3) persons with severe hearing trouble. This third category is a subgroup of the second category and is defined as those persons with a bilateral hearing problem who can at best hear and understand shouted speech (Gallaudet Hearing Scale scores of 3-8). Because the age distributions of the three hearing ability groups are so different, all estimates are shown for three age-specific distributions (3-44 years, 45-64 years, and 65 years and over). Further refinement through age adjustments within each of these three broad age groups may lead to a reduction in the strength of a number of the relationships discussed in this report.

The percent distributions shown in the detailed tables and discussed in the text were calculated on the basis of known data only. Each detailed table in which percents were tabulated on this basis includes the denominator of the known cases used in the calculation so that the reader not wishing to assume equal distributions for the known and unknown cases may reproduce the approximate frequencies of the reported data and recalculate the percents to include the category "unknown" in the percent distributions.

Finally, in comparative statements in this report, terms such as "similar" and "the same" mean that no statistically significant difference exists between the statistics being compared. Terms relating to difference ("greater," "less," and so forth) indicate that the differences are statistically significant. The *t*-test with a critical value of 1.96 (0.05 level of significance) was used to test all comparisons that are discussed. Lack of comment regarding the difference between any two statistics does not mean that the difference was tested and found to be not significant.

Selected sociodemographic characteristics

Age and sex

The overwhelming influence of increasing age on hearing ability is shown in figure 4 and table 1. Among persons 3 years of age and over with no trouble hearing, about 71 percent were under 45 years of age, while only about 26 percent of persons with hearing trouble and 14 percent of persons with severe hearing trouble were under 45 years of age. The proportions of persons 65 years of age and over in each of the hearing ability groups equally dramatize the association between age and hearing trouble: About 1 out of 10 persons with normal hearing, about 4 out of 10 persons with all levels of hearing trouble, and about 6 out of 10 persons with severe hearing trouble were 65 years of age and over.

Figure 5 shows the sex composition of the three hearing ability groups. Among persons with normal hearing, fewer than half (48 percent) were male, although 57 percent of persons with hearing trouble and 56 percent of persons with severe hearing trouble were male. These differences were accentuated when the sex distributions were examined within each of the age groups shown, especially for persons 45-64 years of age. Within this age group, there were roughly twice as many males as females in the two hearing trouble groups, while among persons with normal hearing there were more females (54 percent) than males (46 percent).

Because of the large sex differences and the

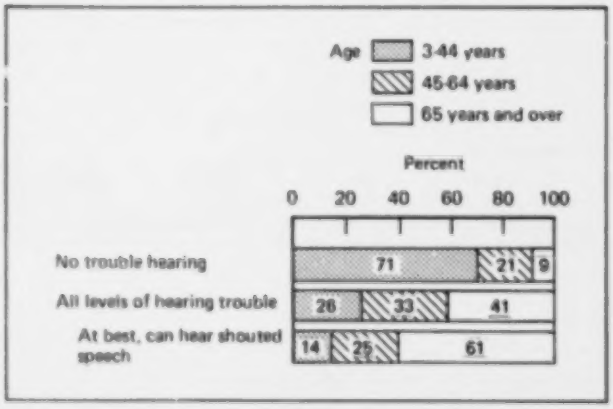


Figure 4. Percent distribution of persons 3 years of age and over by age, according to hearing ability

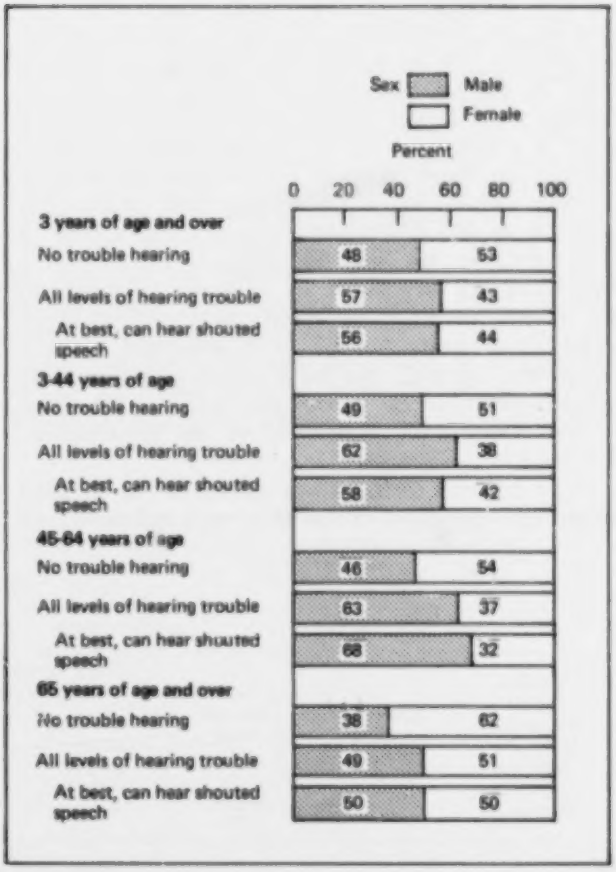


Figure 5. Percent distribution of persons 3 years of age and over by sex, according to age and hearing ability

overwhelming influence of age on hearing ability, data by smaller age groups by sex are shown in table C. The differences in the age-sex distributions among the three hearing ability groups are highlighted by the population "pyramids" shown in figure 6, which for persons with hearing trouble are shaped more like diamonds.

This distinct shape for persons with hearing trouble reflects the relationship of two overriding factors: (1) the increase of hearing trouble with advancing age (starting later for persons with severe hearing trouble than for persons with all levels of hearing trouble) and (2) the increase in the death rate and the rate of institutionalization with advancing age. At a point in the 60-69 years age range for persons with all levels of hearing trouble, and in the 70-79 years age range for persons with severe hearing trouble, the increasing rate of death and institutionalization becomes greater than the increasing prevalence rate of hearing trouble. At this point more persons are leaving the noninstitutionalized population of persons with hearing trouble, by death and institutionalization, than are entering it due to the increased hearing trouble associated with aging. As the shapes of the population "pyramids" indicate, this point occurs several years later for females than it does for males in each of the hearing ability groups, reflecting females' greater longevity.

Race

In the 1977 NHIS, interviewers were instructed to classify (by observation) each person in the household as "white," "black," or "other." According to the data shown in table 2, persons classified as "black" and "other" were proportionately underrepresented among persons with hearing trouble in comparison with normal hearing: Whereas 12 percent of persons with normal hearing were classified as black, only about 7 percent of persons with all levels of hearing trouble and about 6 percent of persons with severe hearing trouble were classified as black.

Figure 7 shows the distribution by race for white and black persons according to hearing ability and age. Black persons were underrepresented in each of the two older age groups. However, for persons 3-44 years of age in the civilian noninstitutionalized population, there was no statistically significant difference between the proportions of black persons among those with normal hearing and among those with severe hearing trouble.

Because the frequencies for persons classified as "other" are small, most comparisons in that category for different levels of hearing ability are not very meaningful. At best, the estimates shown in table 2 suggest that in comparison to white persons, these persons (as is the case for black persons) were underrepresented among persons with trouble hearing.

Education

The amount of completed education of persons 20 years of age and over is highly associated with their hearing ability (figure 8, table 3). The higher the degree of hearing loss, the fewer the years of completed education. For example, 30 percent of persons 20 years of age and over with normal hearing did not receive a high school diploma, but 66 percent of persons with severe hearing loss did not complete high school. While the relationship between increasing hearing loss and decreasing level of education is accentuated because both education level and hearing trouble are associated with age, it holds to a lesser but nevertheless substantial degree for persons in each of the three age groups.

Annual family income

The association between persons' annual family incomes and their ability to hear (table 4, figure 9)

Table C. Percent distribution of persons 3 years of age and over by sex and age, according to hearing ability: United States, 1977

Age	No trouble hearing			Trouble hearing, all levels[1]			At best, can hear shouted speech		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
	Percent distribution								
All ages, 3 years and over	100.0	47.5	52.5	100.0	57.1	42.9	100.0	55.6	44.4
3-9 years	12.1	6.2	5.9	2.7	1.5	1.2	2.1	1.1	*0.9
10-19 years	20.7	10.4	10.3	4.5	2.6	1.9	3.0	1.9	1.1
20-29 years	18.7	9.0	9.7	7.1	4.2	2.9	2.8	1.5	1.4
30-39 years	13.7	6.5	7.2	8.1	5.5	2.5	3.3	1.9	1.4
40-49 years	11.2	5.2	5.9	9.8	6.3	3.6	6.1	4.0	2.1
50-59 years	10.7	4.9	5.8	16.8	10.7	6.2	12.9	8.7	4.3
60-69 years	7.7	3.3	4.4	20.8	11.9	8.9	20.5	12.6	7.9
70-79 years	4.0	1.5	2.5	18.9	9.7	9.2	25.0	13.7	11.3
80-89 years	1.1	0.3	0.7	9.9	4.2	5.7	19.7	8.5	11.2
90 years and over	0.1	0.0	0.1	1.4	0.5	0.8	4.6	1.7	2.8

[1] Includes unknown level of hearing trouble.

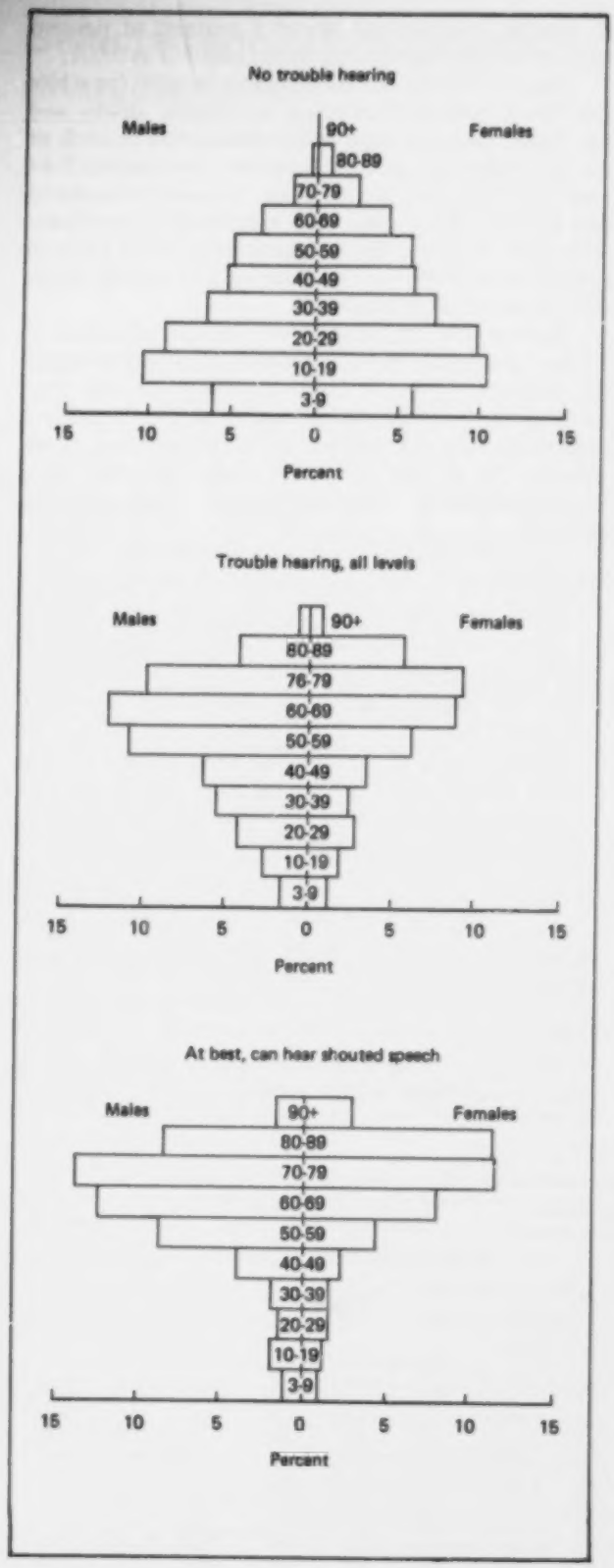


Figure 6. Percent distribution of persons 3 years of age and over by sex and age, according to hearing ability

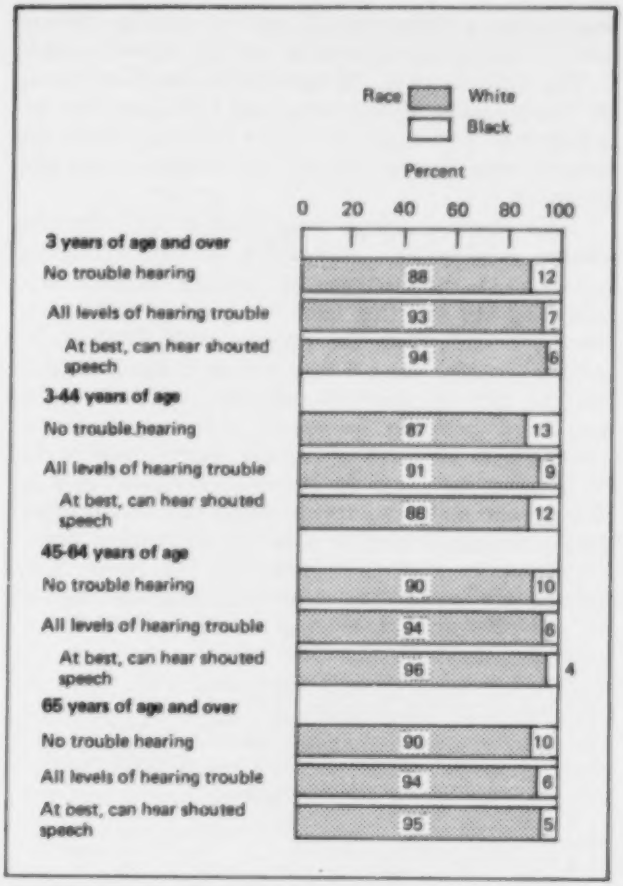

Race
White
Black
Percent
0 20 40 60 80 100
3 years of age and over
No trouble hearing 88 12
All levels of hearing trouble 93 7
At best, can hear shouted speech 94 6
3-44 years of age
No trouble hearing 87 13
All levels of hearing trouble 91 9
At best, can hear shouted speech 88 12
45-64 years of age
No trouble hearing 90 10
All levels of hearing trouble 94 6
At best, can hear shouted speech 96 4
65 years of age and over
No trouble hearing 90 10
All levels of hearing trouble 94 6
At best, can hear shouted speech 95 5

Figure 7. Percent distribution of persons 3 years of age and over by race, according to age and hearing ability

was similar to that between years of completed education and hearing ability. While only 21 percent of persons with normal hearing lived in families with annual incomes of under $7,000, 47 percent of persons with severe hearing trouble lived in families at this income level. However, the pattern within each of the three age groups is neither as strong nor as consistent as for completed years of education, especially for persons 65 years of age and over. Nevertheless, family income tended to be lower when the level of hearing trouble was higher even when the comparisons are limited to age-specific groups.

Usual activity

Information on usual activity during the year preceding the interview is sought for each person 6 years of age and over in the ongoing survey. Only women are asked if their usual activity is "keeping house," and only persons 45 years of age and over are asked whether they are retired. However, retired persons are not classified as retired if they consider different activities as their major activities. Thus the number of persons classified as retired (table 5)

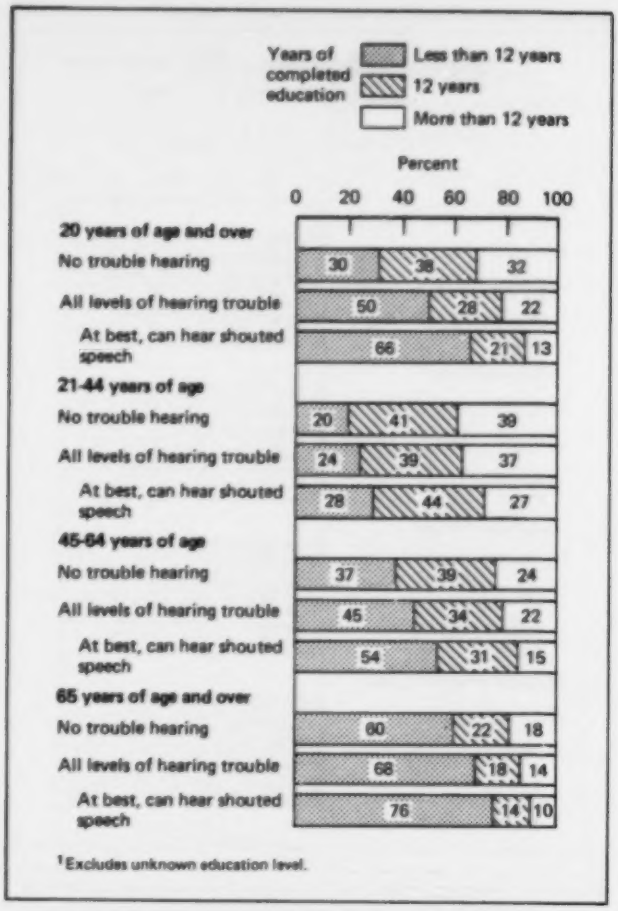

Years of completed education
Less than 12 years
12 years
More than 12 years
Percent
0 20 40 60 80 100
20 years of age and over
No trouble hearing 30 38 32
All levels of hearing trouble 50 28 22
At best, can hear shouted speech 66 21 13
21-44 years of age
No trouble hearing 20 41 39
All levels of hearing trouble 24 39 37
At best, can hear shouted speech 28 44 27
45-64 years of age
No trouble hearing 37 39 24
All levels of hearing trouble 45 34 22
At best, can hear shouted speech 54 31 15
65 years of age and over
No trouble hearing 60 22 18
All levels of hearing trouble 68 18 14
At best, can hear shouted speech 76 14 10
[1]Excludes unknown education level.

Figure 8. Percent distribution[1] of persons 3 years of age and over by years of completed education, according to age and hearing ability

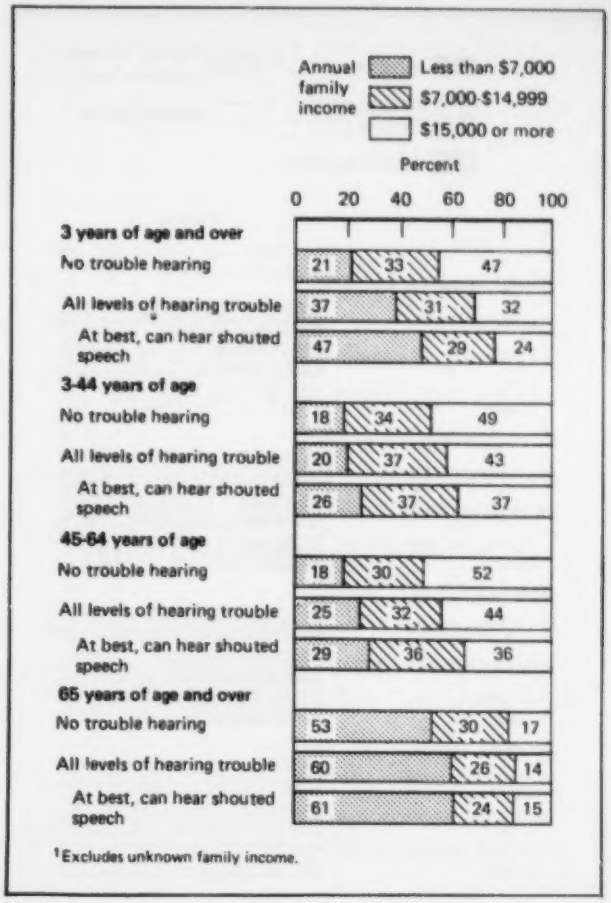

Annual family income
Less than $7,000
$7,000-$14,999
$15,000 or more
Percent
0 20 40 60 80 100
3 years of age and over
No trouble hearing 21 33 47
All levels of hearing trouble 37 31 32
At best, can hear shouted speech 47 29 24
3-44 years of age
No trouble hearing 18 34 49
All levels of hearing trouble 20 37 43
At best, can hear shouted speech 26 37 37
45-64 years of age
No trouble hearing 18 30 52
All levels of hearing trouble 25 32 44
At best, can hear shouted speech 29 36 36
65 years of age and over
No trouble hearing 53 30 17
All levels of hearing trouble 60 26 14
At best, can hear shouted speech 61 24 15
[1]Excludes unknown family income.

Figure 9. Percent distribution[1] of persons 3 years of age and over by annual family income, according to age and hearing ability

should not be interpreted as an estimate of the total number of persons in the noninstitutionalized population of the United States who have retired.

Table 5 and figure 10 show the results for this item according to levels of hearing ability and age. For persons 17 years of age and over, about 57 percent of persons with normal hearing, 40 percent of persons with any degree of hearing trouble, and 23 percent of persons with severe hearing trouble were usually working during the year preceding the interview. The other major distributional difference is in the percent of persons in each hearing ability group classified as retired. About 6 percent of persons with normal hearing, 24 percent of those with all levels of hearing loss, and 36 percent of persons with severe hearing trouble had their usual activity reported as being retired.

This pattern of the relationship for all persons 17 years of age and over between levels of hearing ability on the one hand and the activity status of usually working or being retired on the other is similar to that for persons 45-64 years of age and 65 years of age and over. However, for those 17-44 years of age, a higher percent of persons with hearing trouble were usually working than were persons with normal hearing.

Another major distributional difference in the 17-44-year age range is the high proportion of persons in each of the hearing trouble groups who did not give "going to school" as their major activity and who were classified as doing "something else." While about 14 percent of the persons in this age group with normal hearing were attending school, only about 8 percent of persons with all levels of hearing trouble and 8 percent of persons with severe hearing trouble reported attending school as their usual activity (figure 10). Also, while only about 4 percent of persons with normal hearing indicated that they were doing something else, 6 percent of persons with all levels of hearing trouble and 15 percent of persons with severe hearing trouble were classified in this category.

Geographic region

Table 6 and figure 11 show the distribution of persons with different levels of hearing ability by geographic region. In comparison to persons with

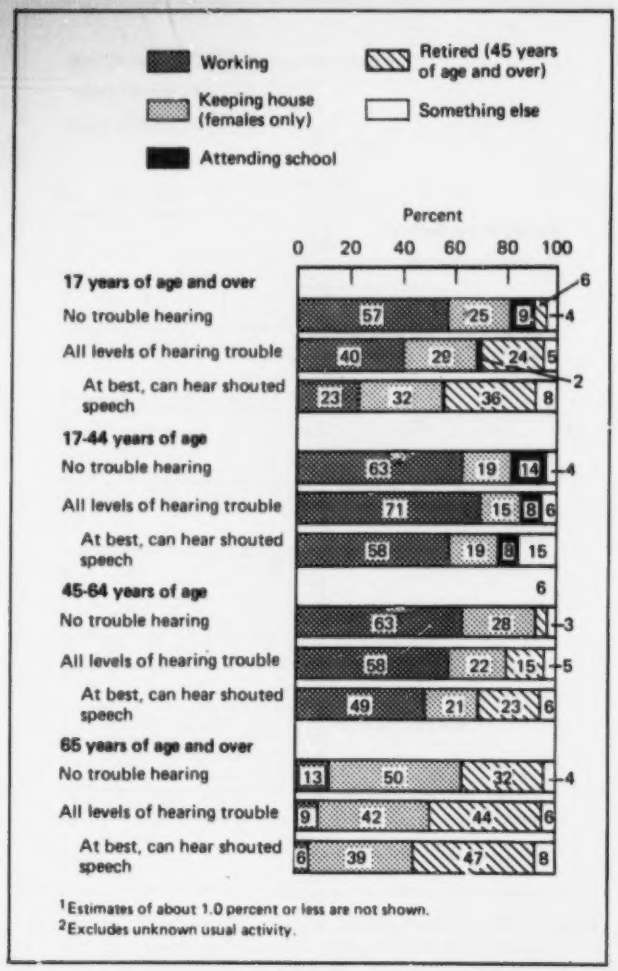

Working
Retired (45 years of age and over)
Keeping house (females only)
Something else
Attending school
Percent
0 20 40 60 80 100
17 years of age and over
No trouble hearing
All levels of hearing trouble
At best, can hear shouted speech
17-44 years of age
No trouble hearing
All levels of hearing trouble
At best, can hear shouted speech
45-64 years of age
No trouble hearing
All levels of hearing trouble
At best, can hear shouted speech
65 years of age and over
No trouble hearing
All levels of hearing trouble
At best, can hear shouted speech
[1]Estimates of about 1.0 percent or less are not shown.
[2]Excludes unknown usual activity.

Figure 10. Percent distribution[2] of persons 17 years of age and over by usual activity during the 12 months preceding interview, according to age and hearing ability

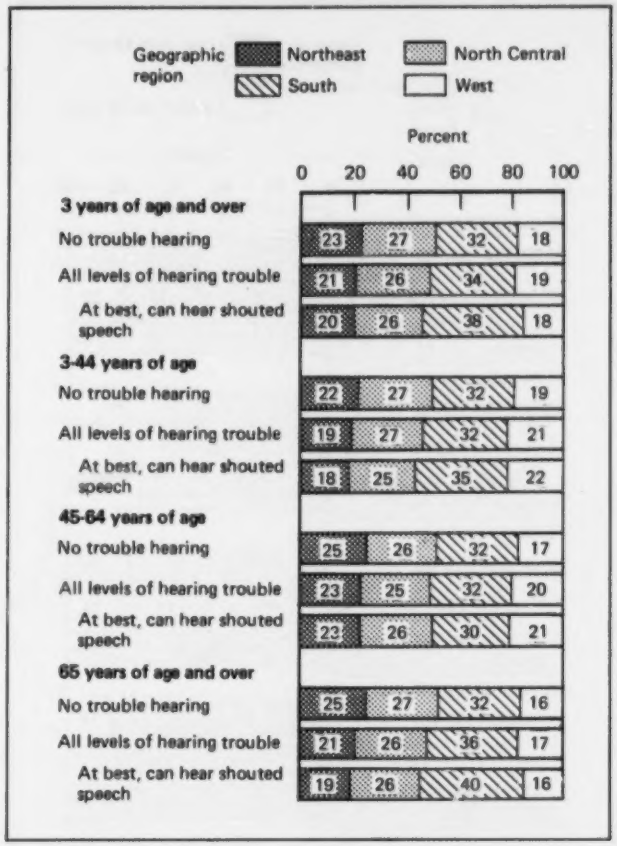


Figure 11. Percent distribution of persons 3 years of age and over by geographic region, according to age and hearing ability

normal hearing, persons with hearing trouble, especially those with severe hearing trouble, tended to be underrepresented in the Northeast and overrepresented in the South. This relationship for all persons 3 years of age and over reflects the regional distribution for persons 65 years of age and over. None of the differences shown in figure 11 with respect to the Northeast and South for persons under 65 years of age are statistically significant.

Place of residence

A similar proportion of persons in each of the hearing ability groups lived in central cities of standard metropolitan statistical areas (SMSA's) (figure 12, table 7). This relation holds for persons of all ages and for each of the three age groups. The main distributional differences among the residence groups are the relatively large number of persons with hearing trouble living outside SMSA's and the relatively small number living in the noncentral-city portion of SMSA's. While not all of the differences among the age groups are statistically significant, the tendency for persons with trouble hearing to be overrepresented in the less urbanized sections of the country and to be underrepresented in suburban areas holds for each of the age groups shown in figure 12.

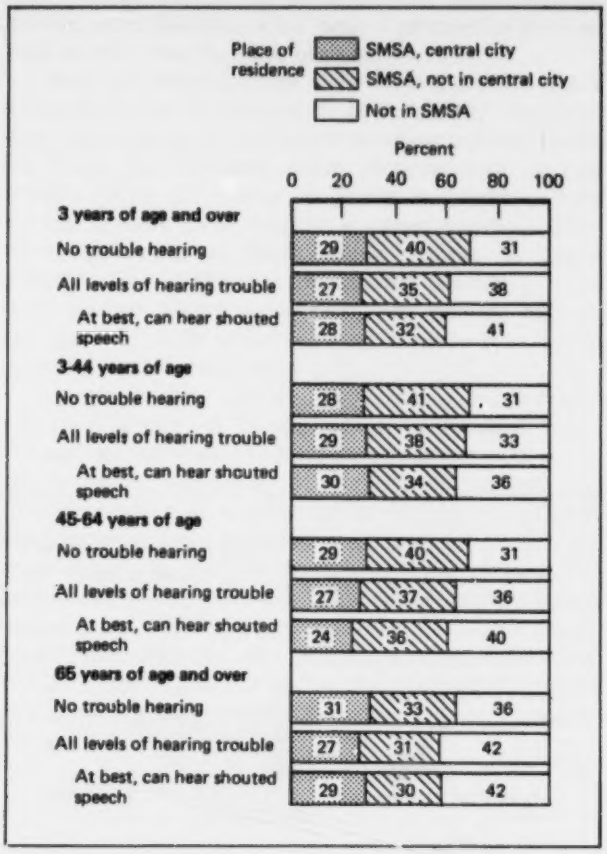

Place of residence
SMSA, central city
SMSA, not in central city
Not in SMSA
Percent
0 20 40 60 80 100
3 years of age and over
No trouble hearing 29 40 31
All levels of hearing trouble 27 35 38
At best, can hear shouted speech 28 32 41
3-44 years of age
No trouble hearing 28 41 31
All levels of hearing trouble 29 38 33
At best, can hear shouted speech 30 34 36
45-64 years of age
No trouble hearing 29 40 31
All levels of hearing trouble 27 37 36
At best, can hear shouted speech 24 36 40
65 years of age and over
No trouble hearing 31 33 36
All levels of hearing trouble 27 31 42
At best, can hear shouted speech 29 30 42

Figure 12. Percent distribution of persons 3 years of age and over by place of residence, according to age and hearing ability

Health characteristics according to hearing status

The following sections show selected health-related characteristics of persons according to level of hearing ability. The focus of the presentations is on the *association* between hearing ability and health-related characteristics, rather than on the specific effects of hearing trouble on health-related behavior. Only limitation of activity due to chronic conditions is considered separately in relation to the reported direct effect of hearing trouble on a particular health characteristic. The special attention to this health characteristic reflects the fact that limitation of activity due to chronic conditions is the NHIS concept most closely resembling the more widely used term "disabled." An estimate of the "disabled" population of the United States is one of the most frequent data requests made of the NHHS.

Limitation of activity

The concept of limitation of activity as used in this report refers to any long-term reduction in activity resulting from chronic disease or impairment. Persons classified as "limited in major activity" are (1) those who were *unable* to carry on the usual activity for their age-sex group, whether it was working, keeping house, or going to school, and (2) persons able but *limited in their ability* to carry out these tasks. A second group consists of persons not limited in their major activity but who were "limited in other activities." The third classification is "not limited in activity."

Table 8 shows estimates for limitation of activity in terms of the above three categories. However, the following discussion of the relationship between hearing ability and limitation of activity due to chronic conditions is restricted mainly to distinguishing persons with any degree of limitation of activity from those who are not at all limited.

Figure 13 shows the strong association between hearing ability and limitation of activity. Whereas only 12 percent of persons with normal hearing were limited in activity, 42 percent of persons with trouble hearing and 61 percent of persons with severe hearing trouble were limited in activity. The relationship between hearing ability and activity holds for each of the three age groups shown in figure 13. While the proportion of persons who were limited in their usual activity increased with age for all of the hearing ability groups, the disparity according to hearing level was greatest for persons 3-44 years of age. In this age

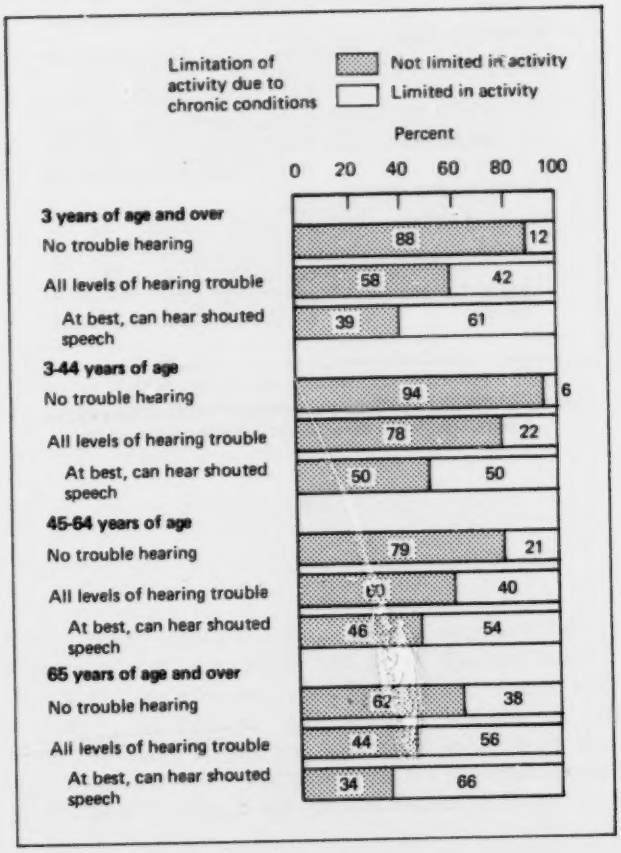


Figure 13. Percent distribution of persons 3 years of age and over by whether limited in actual activity due to chronic conditions, according to age and hearing ability

group about half of all persons with severe hearing trouble were limited, while only 6 percent of persons with normal hearing were limited.

Not only were persons with hearing trouble much more likely to be limited in activity, but they also were more likely to be limited in major activity (table 8). Thus, for instance, while persons with hearing trouble were 2.7 times as likely as persons with normal hearing to be limited in other activities, they were 3.8 times as likely to be limited in major activity. The difference in activity limitations was even greater between persons with normal hearing and persons with severe hearing trouble (the corresponding ratios are 3.3 and 5.7).

In interpreting the results shown in table 8 and discussed above, it is important to recognize the distinction between (1) a high *association* of hearing ability with limitation of activity status and (2) trouble hearing as a *cause* of limitation of activity. Respondents who reported a limitation of activity were asked to list all conditions that caused this limitation. When more than one condition was listed, respondents were asked to designate the single condition they considered the main cause of the limitation. Table 9 and table D show the estimates for the conditions reported as the cause of the limitation among persons reported to be limited in activity according to the three hearing ability groups discussed above.

About 88 percent of persons with hearing trouble and about 80 percent of persons with severe hearing problems did not list their hearing trouble as even a secondary cause of their limitation. And of persons who did list their hearing trouble as a cause of their limitations, only about 7 percent of all persons with hearing trouble and 12 percent of those with severe hearing trouble gave their hearing trouble as the main cause of their limitation. This relationship, however, was strongly affected by age: Relatively few persons 65 years of age and over claimed their hearing trouble as a cause of their limitation, but about one-third of persons 3-44 years of age with hearing trouble and more than half of those with severe hearing trouble reported their hearing trouble as a cause of their limitation. Equally important is that many of these younger persons reported hearing trouble as the main cause of their limitation whereas most of the older persons listed hearing trouble as a secondary cause of their limitation.

Annual bed days

Limitation of activity relates to long-term chronic conditions and impairments. Respondents also are asked in the NHIS to estimate the number of days they have spent in bed because of any type of illness or injury during the 12 months preceding the interview. This measure of disability thus includes the

Table D. Number and percent distribution of persons limited in activity due to chronic conditions by whether hearing trouble is a cause of the limitation, according to age and hearing ability: United States, 1977

Age and whether hearing trouble is a cause of limitation	All hearing levels	Trouble hearing	At best, can hear shouted speech	All hearing levels	Trouble hearing	At best, can hear shouted speech
	Number of persons in thousands			Percent distribution		
3 years of age and over						
All persons limited in activity	28,411	5,965	1,925	100.0	100.0	100.0
Hearing trouble is main cause	413	413	239	1.5	6.9	12.4
Hearing trouble is secondary cause	281	281	147	1.0	4.7	7.6
Hearing trouble is not a cause	27,717	5,270	1,540	97.6	88.3	80.0
3-44 years of age						
All persons limited in activity	8,831	833	222	100.0	100.0	100.0
Hearing trouble is main cause	223	223	109	2.5	26.8	49.1
Hearing trouble is secondary cause	45	45	*12	0.5	5.4	*5.4
Hearing trouble is not a cause	8,563	566	100	97.0	67.9	45.0
45-64 years of age						
All persons limited in activity	10,003	1,871	432	100.0	100.0	100.0
Hearing trouble is main cause	104	104	60	1.0	5.6	13.9
Hearing trouble is secondary cause	73	73	*30	0.7	3.9	*6.9
Hearing trouble is not a cause	9,826	1,694	343	98.2	90.5	79.4
65 years of age and over						
All persons limited in activity	9,577	3,260	1,271	100.0	100.0	100.0
Hearing trouble is main cause	86	86	70	0.9	2.6	5.5
Hearing trouble is secondary cause	164	164	104	1.7	5.0	8.2
Hearing trouble is not a cause	9,328	3,011	1,097	97.4	92.4	86.3

impact of all types of acute conditions as well as of chronic conditions and impairments.

Table 10 and figure 14 show that while only a slightly greater proportion of persons with normal hearing (55 percent) than of persons with trouble hearing (51 percent for both hearing trouble groups) spent no days in bed because of illness or injury during the year preceding their interview, a far greater proportion of persons with hearing trouble reported 8 or more days in bed because of illness or injury (21 percent for all levels of hearing trouble and 28 percent for severe hearing trouble compared with 11 percent for no hearing trouble). This pattern holds for each of the three age groups shown in figure 14.

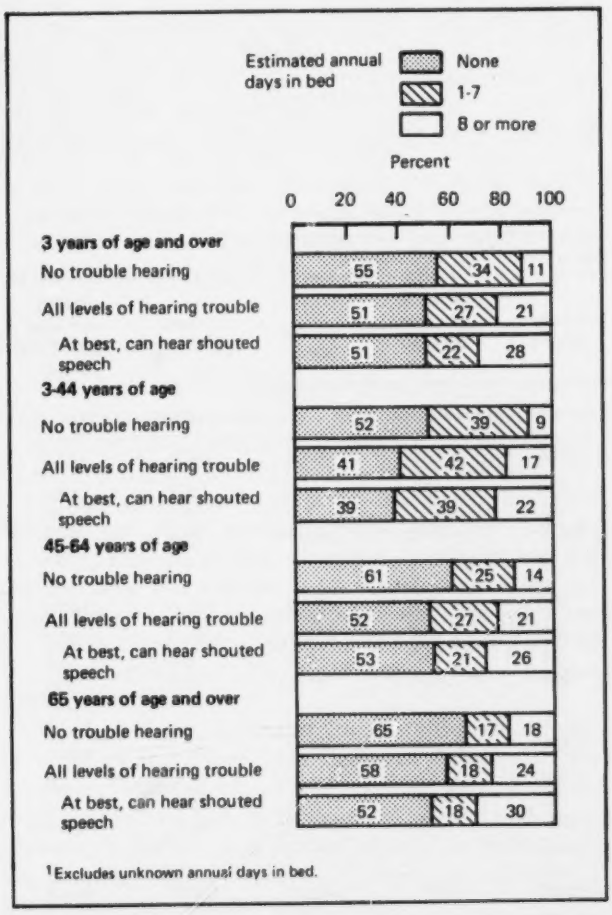
Annual physician contacts

Respondents were asked how many times each family member had seen or talked to a doctor during the 12 months before the interview. The data shown in table 11 and figure 15 relate to physician contacts for any reason, including illnesses and injuries not related to hearing, and contacts not involving any health problems (such as, for instance, for an annual physical examination).

A larger proportion of persons with normal hearing (26 percent) had not seen or talked to a physician during the 12 months preceding the interview than had persons with all levels of hearing trouble (17 percent) and persons with severe hearing trouble (16 percent). Proportionately about twice as many persons with hearing trouble (30 percent for all levels and 36 percent for severe hearing trouble) as persons with normal hearing (16 percent) had seen or talked to a physician six or more times during the preceding year. The pattern of the relationships for each of the three age groups is similar to that for all persons 3 years of age and over (figure 15).

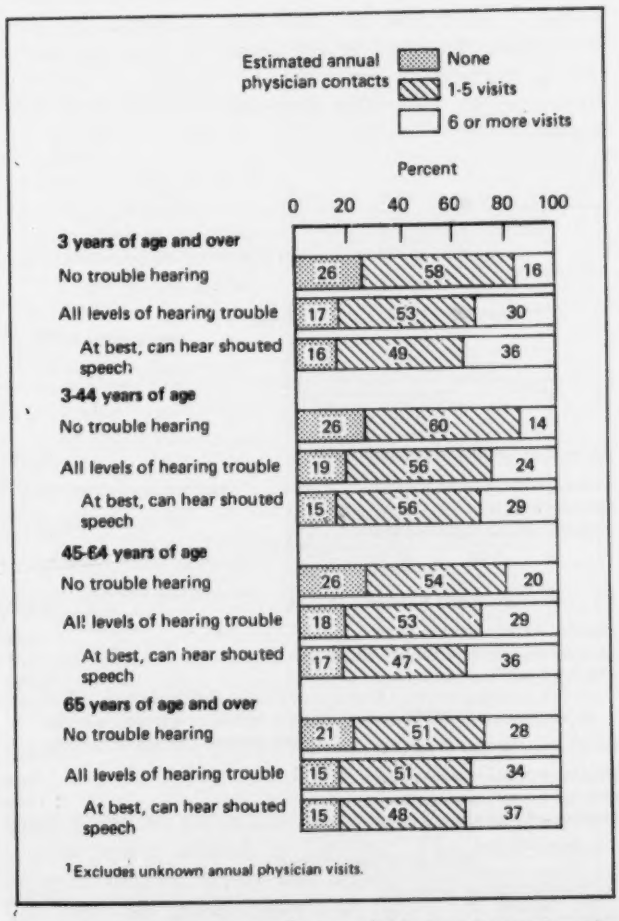
Respondent-assessed health status

Respondents were asked to evaluate each family member's health status in response to the following question: "Compared to other persons ---'s age,


Estimated annual days in bed
None
1-7
8 or more
Percent
0 20 40 60 80 100
3 years of age and over
No trouble hearing 55 34 11
All levels of hearing trouble 51 27 21
At best, can hear shouted speech 51 22 28
3-44 years of age
No trouble hearing 52 39 9
All levels of hearing trouble 41 42 17
At best, can hear shouted speech 39 39 22
45-64 years of age
No trouble hearing 61 25 14
All levels of hearing trouble 52 27 21
At best, can hear shouted speech 53 21 26
65 years of age and over
No trouble hearing 65 17 18
All levels of hearing trouble 58 18 24
At best, can hear shouted speech 52 18 30

[1]Excludes unknown annual days in bed.

Figure 14. Percent distribution[1] of persons 3 years of age and over by estimated days in bed during the 12 months preceding the interview, according to age and hearing ability


Estimated annual physician contacts
None
1-5 visits
6 or more visits
Percent
0 20 40 60 80 100
3 years of age and over
No trouble hearing 26 58 16
All levels of hearing trouble 17 53 30
At best, can hear shouted speech 16 49 36
3-44 years of age
No trouble hearing 26 60 14
All levels of hearing trouble 19 56 24
At best, can hear shouted speech 15 56 29
45-64 years of age
No trouble hearing 26 54 20
All levels of hearing trouble 18 53 29
At best, can hear shouted speech 17 47 36
65 years of age and over
No trouble hearing 21 51 28
All levels of hearing trouble 15 51 34
At best, can hear shouted speech 15 48 37

[1]Excludes unknown annual physician visits.

Figure 15. Percent distribution[1] of persons 3 years of age and over by estimated physician contacts during the 12 months preceding interview, according to age and hearing ability

would you say that his health is excellent, good, fair, or poor?" At least three things should be noted about the data derived from responses to this question. First, the question asks about a person's health and not about any impairment the person might have. As such, it is entirely reasonable for a person with profound deafness to be considered in "excellent" health and for a person with normal hearing to be in "poor" health.

Second, although the concept being measured is often called "self-assessed health status," proxy responses are accepted from family members meeting the NHIS eligible-respondent rules for adult family members not participating in the interview and ineligible adult respondents (such as a mentally retarded family member). Further, responses for children and youth under 17 years of age are always sought from eligible adult family members. Research related to self- and proxy responses for adults in the general population has shown that although there may be some significant difference between "excellent" and "good," and between "fair" and "poor," there appear to be no significant differences in the distributions between self- and proxy responses when the categories "excellent" and "good" are combined and compared with the combined categories "fair" and "poor."[9] For this reason, although the data shown in table 12 are presented for each of the four categories, the discussion in this text is limited to comparisons for the combined category "fair" or "poor."

Third, among the health-related concepts measured in the NHIS, respondent-assessed health status is the single item that best correlates with other items related to health status and items related to the utilization of health services. As such, it may be viewed as a summary concept for the results related to health presented in the previous sections.

Figure 16 and table 12 show that proportionately about 3 times as many persons with hearing trouble (31 percent) and about 4 times as many persons with severe hearing trouble (43 percent) as persons with normal hearing (11 percent) judged their health to be fair or poor in comparison to other persons their age. With some minor variations, the same pattern is reflected in each of the three age groups shown.

As in the normal hearing population, a higher proportion of females with hearing loss (34 percent) assessed their health as fair or poor than did males (29 percent). However, among persons with severe hearing trouble the proportions assessing their health as fair or poor were similar for males (44 percent) and for females (43 percent).

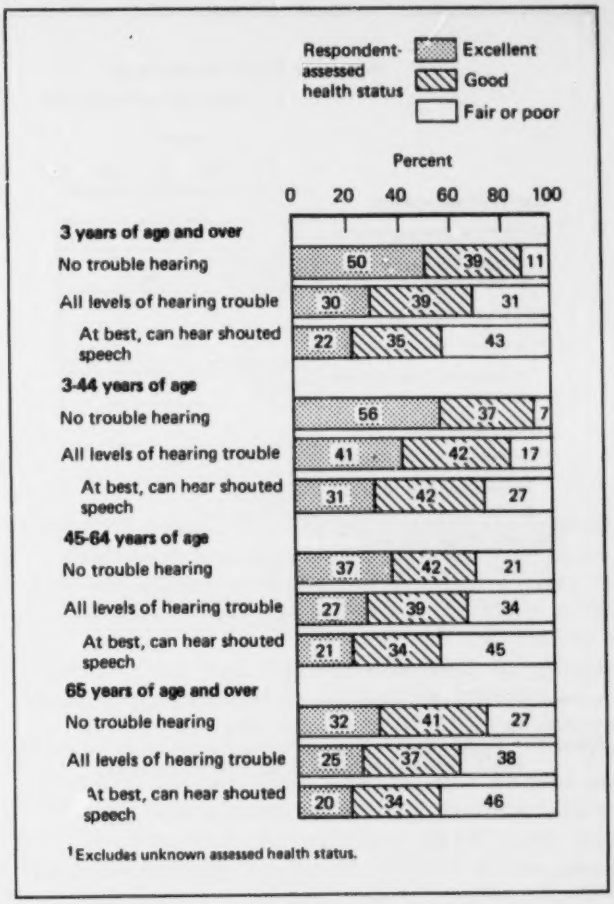
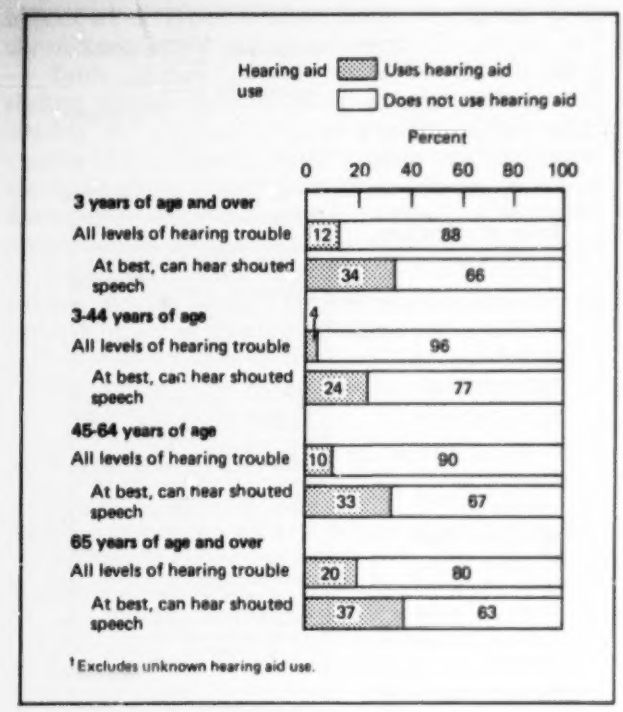


Figure 16. Percent distribution[1] of persons 3 years of age and over by respondent-assessed health status, according to age and hearing ability

Hearing aid use

A reported 1.9 million persons used hearing aids at the time of interview during 1977. About 12 percent of persons with all levels of hearing trouble and 34 percent of persons with severe hearing trouble reported the use of a hearing aid (table 13, figure 17). The percent of persons with all levels of hearing trouble using hearing aids was highly associated with age; the proportion increased from 4 percent for persons 3-44 years of age to 20 percent for persons 65 years of age and over. Age was less highly associated with hearing aid use among persons with severe hearing trouble. Among the latter group, the proportion increased from 24 percent for persons 3-44 years of age to 37 percent for persons 65 years of age and over.

About 54 percent of the persons using hearing aids were male. For persons with all levels of hearing trouble, approximately the same proportion of males and females used hearing aids. However, for persons with severe hearing trouble a greater proportion of females (37 percent) than males (31 percent) used hearing aids.



[1] Excludes unknown hearing aid use.

Figure 17. Percent distribution[1] of persons 3 years of age and over by hearing aid use, according to age and hearing ability

Prevalence rates of hearing trouble in 1971 and 1977

Table E shows the distribution of the total civilian noninstitutionalized population 3 years of age and over by hearing ability for 1971[5] and 1977. In both years a similar proportion of the population had some trouble hearing (6.9 percent for 1971 and 7.0 percent for 1977). However, differences between the two periods did occur within the groups of persons with trouble hearing. From 1971 to 1977, the percent of persons with bilateral hearing problems increased from 3.3 percent to 3.6 percent. Within the group of persons with bilateral hearing trouble, the proportional increase from 1971 to 1977 was due entirely to the increase in the proportion of persons with severe hearing trouble—persons who could at best hear and understand shouted speech.

The last column of table E shows this same relationship in terms of the percent increase from 1971 to 1977 in the number of persons for each of the hearing status groups. While the civilian noninstitutionalized population increased by 5.9 percent during this period, the number of persons with severe hearing trouble increased by 28.9 percent. During the same period, the percent of persons who could hear and understand speech spoken in a normal voice or whispered showed no statistically significant increase.

Table F shows that for persons with *all levels and types of hearing trouble,* the prevalence rates remained about the same for persons 3-16 years of age, the rate for persons 45-64 years of age showed a slight increase, and the rate decreased for persons 17-44 years of age and 65 years of age and over.

For persons with *all types of bilateral hearing trouble,* the increase in the prevalence rate for persons of all ages from 33.5 to 35.5 persons per 1,000 population is not statistically significant. However, for persons in the age group 45-64 years, there was a statistically significant increase in the prevalence rate during the 6-year period (from 44.2 to 50.2 persons per 1,000 population).

For persons with *severe hearing trouble,* the prevalence rate increased from 12.8 to 15.5 persons per 1,000 population. Only for persons 45 years of age and over was the increase statistically significant.

In relation to sex, the prevalence rates for females in 1971 and 1977 are similar for each of the levels of hearing trouble and for all of the age groups, indicating that the differences discussed above derive mainly from changes in the prevalence rates of

Table E. Number and percent distribution of persons 3 years of age and over by hearing ability, according to year and percent increase from 1971 to 1977: United States, 1971 and 1977

Hearing ability	*1971*	*1977*	*1971*	*1977*	*Increase 1971-77*
	Number of persons in thousands		Percent distribution		Percent
All persons 3 years of age and over	191,602	202,936	100.0	100.0	5.9
No trouble hearing	178,374	188,696	93.1	93.0	5.8
Trouble hearing[1]	13,228	14,240	6.9	7.0	7.7
Bilateral hearing trouble[2]	6,414	7,208	3.3	3.6	12.4
At best, can hear shouted speech	2,447	3,153	1.3	1.6	28.9
Can hear speech spoken in normal voice	3,878	3,984	2.0	2.0	2.7
All other types of hearing trouble	6,814	6,953	3.6	3.4	2.1

[1] 1977 total includes 78,221 persons who did not respond to either scale.
[2] 1971 total includes 89,000 persons and 1977 total includes 71,144 persons who did not respond to the Gallaudet Hearing Scale.

hearing trouble for males. For *all levels and types of hearing trouble,* the prevalence rates for males decreased for the 17-24 years and 65 years and over age groups and increased for the 45-64 years age group. For *all types of bilateral hearing trouble,* the rates increased for the 45-64 years age group (but not for the 65 years and over age group) and decreased for the 17-24 years age group. For both of these types of hearing trouble, the changes for the age groups tended to cancel each other, leaving the overall prevalence rates for the 2 years relatively unchanged.

There was an overall increase in the prevalence of *severe hearing trouble* among males 3 years of age and over between 1971 and 1977, from 14.7 to 17.9 per 1,000 males. The rate increased by 44 percent for males 45-64 years of age and by 56 percent for males 25-44 years of age. However, because the latter age group is relatively small in number, the large estimated percent increase is not statistically significant, while the estimated 44 percent increase for males 45-64 years is statistically significant and constitutes a substantial increase.

In summary, although the overall prevalence rates for all levels of hearing trouble were similar in 1971 and 1977, there was an increase in the prevalence rate of severe hearing trouble. The prevalence rates for females for each of the levels of hearing trouble and for all ages were similar, while those for males did show changes. The major change for males was the increase in the prevalence rate for those with severe hearing trouble aged 45-64, producing a rate of 26.2 males per 1,000 in the male population—a rate 44 percent higher than in 1971.

Table F. Number of persons with hearing trouble 3 years of age and over, by hearing ability, year, sex, and age: United States, 1971 and 1977

Sex and age	All levels of hearing trouble[1]		Bilateral hearing trouble			
			At best, can hear shouted speech		All levels[1]	
	1971	1977	1971	1977	1971	1977
	Number of persons per 1,000 population					
Both sexes						
All ages 3 years and over	69.0	70.2	33.5	35.5	12.8	15.5
3-16 years	16.2	16.3	7.1	7.5	2.7	2.6
17-24 years	26.5	20.5	7.8	6.3	2.3	2.2
25-44 years	44.7	41.4	13.0	14.2	3.3	4.4
45-64 years	100.0	107.3	44.2	50.2	13.3	18.3
65 years and over	274.1	261.9	173.0	164.6	78.7	86.0
Male						
All ages 3 years and over	80.9	83.2	41.0	43.8	14.7	17.9
3-16 years	17.8	18.3	8.2	8.3	3.1	2.9
17-24 years	34.9	22.9	11.0	7.4	3.0	2.6
25-44 years	55.7	56.4	17.3	20.5	3.4	5.3
45-64 years	128.6	141.1	62.7	72.9	18.2	26.1
65 years and over	326.2	313.4	215.0	206.5	96.8	103.8
Female						
All ages 3 years and over	58.1	58.0	26.5	27.8	10.9	13.3
3-16 years	14.5	14.1	5.8	6.6	2.3	2.3
17-24 years	18.9	18.1	5.1	5.4	*1.5	*1.9
25-44 years	34.5	27.4	8.9	8.4	3.2	3.5
45-64 years	74.1	76.4	27.4	29.6	8.9	11.2
65 years and over	235.9	225.7	142.1	135.1	65.4	73.4

[1] Includes unknown level of hearing trouble.

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Table 1. Number and percent distribution of persons 3 years of age and over by age and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
Both sexes									
All ages 3 years and over	202,936	188,696	14,240	7,208	842	2,310	3,984	5,969	985
3-16 years	50,692	49,868	824	379	36	96	242	308	135
17-44 years	86,620	83,688	2,933	986	82	230	668	1,631	297
17-24 years	31,340	30,699	642	199	*24	46	127	376	66
25-44 years	55,280	52,989	2,291	787	58	183	541	1,255	230
45-64 years	43,357	38,705	4,652	2,178	149	646	1,346	2,143	301
45-54 years	23,191	21,237	1,954	836	50	228	547	974	136
55-64 years	20,166	17,468	2,698	1,342	99	418	799	1,168	165
65 years and over	22,266	16,435	5,831	3,665	576	1,339	1,730	1,886	252
65-74 years	14,259	11,276	2,983	1,696	196	566	922	1,138	132
75 years and over	8,007	5,159	2,848	1,969	380	773	807	749	120
3-14 years	42,330	41,653	677	324	*28	88	203	231	119
15-44 years	94,982	91,902	3,080	1,041	89	237	707	1,708	312
Males									
All ages 3 years and over	97,680	89,548	8,131	4,282	429	1,322	2,483	3,178	621
3-16 years	25,843	25,369	474	215	*15	61	137	189	67
17-44 years	41,940	40,084	1,856	660	38	141	475	970	213
17-24 years	15,233	14,884	349	112	*11	*28	71	198	40
25-44 years	26,707	25,200	1,507	548	*28	113	404	773	174
45-64 years	20,700	17,781	2,920	1,508	91	451	938	1,182	211
45-54 years	11,181	9,946	1,236	563	*25	164	369	574	97
55-64 years	9,519	7,835	1,684	944	66	287	569	608	114
65 years and over	9,197	6,315	2,882	1,899	286	670	933	837	129
65-74 years	6,196	4,574	1,623	1,006	111	319	569	533	73
75 years and over	3,000	1,741	1,259	894	174	351	363	304	56
3-14 years	21,590	21,203	387	187	*13	55	117	139	58
15-44 years	46,193	44,250	1,943	687	40	147	495	1,021	222
Females									
All ages 3 years and over	105,256	99,148	6,108	2,927	413	988	1,501	2,790	363
3-16 years	24,849	24,499	350	164	*21	35	104	119	67
17-44 years	44,680	43,604	1,076	326	43	88	192	661	83
17-24 years	16,107	15,815	292	87	*13	*18	55	179	*27
25-44 years	28,573	27,789	784	239	*30	70	137	482	57
45-64 years	22,657	20,925	1,732	670	58	195	408	961	90
45-54 years	12,010	11,292	718	273	*25	64	178	400	40
55-64 years	10,647	9,633	1,015	398	*34	131	229	560	50
65 years and over	13,070	10,120	2,950	1,766	290	669	797	1,050	122
65-74 years	8,063	6,703	1,360	691	85	247	353	605	59
75 years and over	5,007	3,417	1,589	1,075	206	422	444	445	64
3-14 years	20,740	20,450	290	137	*15	*33	85	92	61
15-44 years	48,789	47,653	1,136	353	49	91	212	687	90

See footnotes at end of table.

Table 1. Number and percent distribution of persons 3 years of age and over by age and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Percent distribution								
Both sexes									
All ages 3 years and over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3-16 years	25.0	26.4	5.8	5.3	4.3	4.2	6.1	5.2	13.7
17-44 years	42.7	44.4	20.6	13.7	9.7	10.0	16.8	27.3	30.2
17-24 years	15.4	16.3	4.5	2.8	*2.9	2.0	3.2	6.3	6.7
25-44 years	27.2	28.1	16.1	10.9	6.9	7.9	13.6	21.0	23.4
45-64 years	21.4	20.5	32.7	30.2	17.7	28.0	33.8	35.9	30.6
45-54 years	11.4	11.3	13.7	11.6	5.9	9.9	13.7	16.3	13.8
55-64 years	9.9	9.3	18.9	18.6	11.8	18.1	20.1	19.6	16.8
65 years and over	11.0	8.7	40.9	50.8	68.4	58.0	43.4	31.6	25.6
65-74 years	7.0	6.0	20.9	23.5	23.3	24.5	23.1	19.1	13.4
75 years and over	3.9	2.7	20.0	27.3	45.1	33.5	20.3	12.5	12.2
3-14 years	20.9	22.1	4.8	4.5	*3.3	3.8	5.1	3.9	12.1
15-44 years	46.8	48.7	21.6	14.4	10.6	10.3	17.7	28.6	31.7
Males									
All ages 3 years and over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3-16 years	26.5	28.3	5.8	5.0	*3.5	4.6	5.5	5.9	10.8
17-44 years	42.9	44.8	22.8	15.4	8.9	10.7	19.1	30.5	34.3
17-24 years	15.6	16.6	4.3	2.6	*2.6	*2.1	2.9	6.2	6.4
25-44 years	27.3	28.1	18.5	12.8	*6.5	8.5	16.3	24.3	28.0
45-64 years	21.2	19.9	35.9	35.2	21.2	34.1	37.8	37.2	34.0
45-54 years	11.4	11.1	15.2	13.1	*5.8	12.4	14.9	18.1	15.6
55-64 years	9.7	8.7	20.7	22.0	15.4	21.7	22.9	19.1	18.4
65 years and over	9.4	7.1	35.4	44.3	66.7	50.7	37.6	26.3	20.8
65-74 years	6.3	5.1	20.0	23.5	25.9	24.1	22.9	16.8	11.8
75 years and over	3.1	1.9	15.5	20.9	40.6	26.6	14.6	9.6	9.0
3-14 years	22.1	23.7	4.8	4.4	*3.0	4.2	4.7	4.4	9.3
15-44 years	47.3	49.4	23.9	16.0	9.3	11.1	19.9	32.1	35.7
Females									
All ages 3 years and over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3-16 years	23.6	24.7	5.7	5.6	*5.1	3.5	6.9	4.3	18.5
17-44 years	42.4	44.0	17.6	11.1	10.4	8.9	12.8	23.7	22.9
17-24 years	15.3	16.0	4.8	3.0	*3.1	*1.8	3.7	6.4	*7.4
25-44 years	27.1	28.0	12.8	8.2	*7.3	7.1	9.1	17.3	15.7
45-64 years	21.5	21.1	28.4	22.9	14.0	19.7	27.2	34.4	24.8
45-54 years	11.4	11.4	11.8	9.3	*6.1	6.5	11.9	14.3	11.0
55-64 years	10.1	9.7	16.6	13.6	*8.2	13.3	15.3	20.1	13.8
65 years and over	12.4	10.2	48.3	60.3	70.2	67.7	53.1	37.6	33.6
65-74 years	7.7	6.8	22.3	23.6	20.6	25.0	23.5	21.7	16.3
75 years and over	4.8	3.4	26.0	36.7	49.9	42.7	29.6	15.9	17.6
3-14 years	19.7	20.6	4.7	4.7	*3.6	*3.3	5.7	3.3	16.8
15-44 years	46.4	48.1	18.6	12.1	11.9	9.2	14.1	24.6	24.8

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 2. Number and percent distribution of persons 3 years of age and over by race, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Race, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
All ages 3 years and over, both sexes									
All races	202,936	188,696	14,240	7,208	842	2,310	3,984	5,969	985
White	176,320	163,137	13,183	6,743	789	2,157	3,733	5,438	931
Black	23,689	22,729	959	430	39	147	237	471	52
Other	2,927	2,830	97	35	*14	*6	*14	60	*2
All ages 3 years and over, male									
All races	97,680	89,548	8,131	4,282	429	1,322	2,483	3,178	621
White	85,252	77,671	7,581	4,022	410	1,229	2,339	2,919	592
Black	10,983	10,496	488	246	*14	91	137	211	*29
Other	1,445	1,382	63	*14	*5	*2	*7	49	*-
All ages 3 years and over, female									
All races	105,256	99,148	6,108	2,927	413	988	1,501	2,790	363
White	91,069	85,467	5,602	2,722	378	928	1,393	2,519	339
Black	12,705	12,233	472	184	*26	56	101	260	*23
Other	1,482	1,448	*34	*21	*9	*4	*7	*11	*2
Both sexes, 3-44 years of age									
All races	137,312	133,556	3,757	1,365	117	326	909	1,940	431
White	117,366	113,977	3,388	1,226	97	290	828	1,754	391
Black	17,640	17,315	325	125	*16	36	71	156	40
Other	2,306	2,263	43	*15	*5	*-	*10	*29	*-
Both sexes, 45-64 years of age									
All races	43,357	38,705	4,652	2,178	149	646	1,346	2,143	301
White	38,792	34,423	4,368	2,073	140	615	1,285	1,979	290
Black	4,098	3,830	268	100	*4	*31	61	153	*12
Other	468	452	*16	*5	*5	*-	*-	*11	*-
Both sexes, 65 years of age and over									
All races	22,266	16,435	5,831	3,665	576	1,339	1,730	1,886	252
White	20,163	14,737	5,427	3,445	551	1,252	1,620	1,704	250
Black	1,950	1,584	366	205	*20	80	105	161	*-
Other	153	115	38	*15	*5	*6	*5	*21	*2
	Percent distribution								
All ages 3 years and over, both sexes									
All races	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White	86.9	86.5	92.6	93.5	93.7	93.4	93.7	91.1	94.5
Black	11.7	12.0	6.7	6.0	4.6	6.4	5.9	7.9	5.3
Other	1.4	1.5	0.7	0.5	*1.7	*0.3	*0.4	1.0	*0.2
All ages 3 years and over, male									
All races	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White	87.3	86.7	93.2	93.9	95.6	93.0	94.2	91.9	95.3
Black	11.2	11.7	6.0	5.7	*3.3	6.9	5.5	6.6	*4.7
Other	1.5	1.5	0.8	*0.3	*1.2	*0.2	*0.3	1.5	*0.0

See footnotes at end of table.

Table 2. Number and percent distribution of persons 3 years of age and over by race, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Race, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Percent distribution								
All ages 3 years and over, female									
All races	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White	86.5	86.2	91.7	93.0	91.5	93.9	92.8	90.3	93.4
Black	12.1	12.3	7.7	6.3	*6.3	5.7	6.7	9.3	*6.3
Other	1.4	1.5	*0.6	*0.7	*2.2	*0.4	*0.5	*0.4	*0.6
Both sexes, 3-44 years of age									
All races	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White	85.5	85.3	90.2	89.8	82.9	89.0	91.1	90.4	90.7
Black	12.8	13.0	8.7	9.2	*13.7	11.0	7.8	8.0	9.3
Other	1.7	1.7	1.1	*1.1	*4.3	*0.0	*1.1	*1.5	*0.0
Both sexes, 45-64 years of age									
All races	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White	89.5	88.9	93.9	95.2	94.0	95.2	95.5	92.3	96.3
Black	9.5	9.9	5.8	4.6	*2.7	*4.8	4.5	7.1	*4.0
Other	1.1	1.2	*0.3	*0.2	*3.4	*0.0	*0.0	*0.5	*0.0
Both sexes, 65 years of age and over									
All races	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White	90.6	89.7	93.1	94.0	95.7	93.5	93.6	90.3	99.2
Black	8.8	9.6	6.3	5.6	*3.5	6.0	6.1	8.5	*0.0
Other	0.7	0.7	0.7	*0.4	*0.9	*0.4	*0.3	*1.1	*0.8

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 3. Number and percent distribution of persons 20 years of age and over by education level, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Education level, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
All education levels									
Both sexes, all ages 20 years and over	139,965	126,755	13,209	6,747	791	2,201	3,691	5,562	825
Males	65,801	58,257	7,544	4,017	408	1,248	2,317	2,940	539
Females	74,164	68,498	5,666	2,730	383	953	1,374	2,622	286
20-44 years	74,341	71,615	2,726	903	67	216	615	1,533	272
45-64 years	43,357	38,705	4,652	2,178	149	646	1,346	2,143	301
65 years and over	22,266	16,435	5,831	3,665	576	1,339	1,730	1,886	252
All known education levels									
Both sexes, all ages 20 years and over	137,687	124,766	12,921	6,564	735	2,132	3,636	5,487	809
Males	64,731	57,340	7,391	3,926	385	1,222	2,279	2,900	528
Females	72,955	67,425	5,530	2,638	351	910	1,357	2,587	280
20-44 years	73,465	70,776	2,689	883	55	212	610	1,522	269
45-64 years	42,643	38,055	4,588	2,149	145	635	1,333	2,115	300
65 years and over	21,578	15,934	5,644	3,533	534	1,284	1,693	1,849	240
	Percent distribution								
All ages 20 years and over, both sexes									
All education levels	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 12 years of education	32.2	30.3	50.4	56.8	70.3	64.0	49.7	45.0	33.7
12 years of education	36.9	37.9	28.0	24.7	17.4	22.4	27.4	31.5	31.9
More than 12 years of education	30.9	31.8	21.5	18.5	12.1	13.6	22.9	23.4	34.2
All ages 20 years and over, male									
All education levels	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 12 years of education	31.7	29.5	48.9	55.4	71.4	62.6	48.7	42.8	32.4
12 years of education	33.2	34.0	27.1	25.0	17.4	22.5	27.5	29.0	32.4
More than 12 years of education	35.0	36.4	24.1	19.6	11.2	14.8	23.9	28.1	35.2
All ages 20 years and over, female									
All education levels	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 12 years of education	32.6	31.0	52.5	58.9	69.2	65.9	51.4	47.5	36.4
12 years of education	40.2	41.1	29.3	24.3	17.4	22.2	27.3	34.3	31.1
More than 12 years of education	27.2	27.9	18.2	16.8	13.4	11.9	21.2	18.2	32.5
Both sexes, 20-44 years of age									
All education levels	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 12 years of education	19.9	19.8	23.9	22.8	*25.5	29.2	19.8	25.6	16.4
12 years of education	40.9	41.0	38.9	40.5	*47.3	43.4	39.0	37.7	42.4
More than 12 years of education	39.2	39.2	37.1	36.7	*27.3	27.4	41.1	36.7	41.3
Both sexes, 45-64 years of age									
All education levels	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 12 years of education	38.2	37.4	44.7	46.4	63.4	51.8	41.5	44.4	33.3
12 years of education	38.1	38.7	33.5	32.9	*22.8	32.6	34.1	34.6	31.3
More than 12 years of education	23.7	23.9	21.8	20.8	*14.5	15.6	24.4	20.9	35.3

See footnotes at end of table.

Table 3. Number and percent distribution of persons 20 years of age and over by education level, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Education level, age, and sex	*All persons 3 years of age and over*	*Hearing ability*							
			Hearing trouble						
				Bilateral hearing trouble					
		No hearing trouble	*All levels of hearing trouble*[1]	*All speech comprehension statuses*[2]	*At best, can hear words shouted in ear*	*Can hear words shouted across a room*	*Can hear words spoken in a normal voice*	*Unilateral hearing trouble, all levels*	*Hearing trouble borderline or unclear whether unilateral or bilateral*
Both sexes, 65 years of age and over	Percent distribution								
All education levels	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 12 years of education	62.3	60.4	67.6	71.6	77.2	75.9	66.9	61.8	53.8
12 years of education	21.0	21.9	18.4	15.9	12.9	13.9	18.0	22.9	20.8
More than 12 years of education	16.7	17.7	14.0	12.5	10.1	10.3	15.2	15.3	25.0

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 4. Number and percent distribution of persons 3 years of age and over by known family income, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Known family income, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
All known family incomes									
Both sexes, all ages 3 years and over	184,188	171,339	12,849	6,486	756	2,075	3,595	5,447	867
Males	88,807	81,383	7,423	3,890	384	1,203	2,266	2,948	557
Females	95,382	89,956	5,426	2,596	372	871	1,329	2,499	310
3-44 years	126,724	123,166	3,558	1,296	112	315	856	1,833	412
45-64 years	38,458	34,220	4,238	1,993	140	586	1,234	1,961	263
65 years and over	19,006	13,953	5,053	3,197	504	1,174	1,505	1,653	192
	Percent distribution								
All ages 3 years and over, both sexes									
All incomes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under $7,000	22.0	20.8	37.0	41.0	47.9	47.2	36.0	34.6	23.2
$7,000-14,999	32.5	32.6	31.2	31.4	27.6	29.6	33.1	30.4	33.6
$15,000 and over	45.5	46.5	31.8	27.6	24.5	23.2	30.9	35.1	43.3
All ages 3 years and over, male									
All incomes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under $7,000	19.0	18.0	30.2	34.2	42.7	41.4	29.1	27.1	19.6
$7,000-14,999	32.7	32.7	32.8	34.4	33.3	33.7	34.9	30.5	33.2
$15,000 and over	48.2	49.3	37.0	31.4	23.7	24.9	36.1	42.4	47.0
All ages 3 years and over, female									
All incomes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under $7,000	24.7	23.4	46.3	51.1	53.2	55.2	47.7	43.3	29.4
$7,000-14,999	32.3	32.5	29.0	27.0	21.8	24.0	30.2	30.2	34.2
$15,000 and over	43.0	44.1	24.7	21.9	25.0	20.8	22.0	26.5	36.5
Both sexes, 3-44 years of age									
All incomes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under $7,000	18.0	17.9	19.5	21.2	*27.7	25.7	18.3	19.1	15.0
$7,000-14,999	33.6	33.5	37.2	36.2	*26.8	40.6	36.0	37.2	39.6
$15,000 and over	48.4	48.5	43.4	42.6	44.6	33.7	45.8	43.7	45.1
Both sexes, 45-64 years of age									
All incomes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under $7,000	18.9	18.2	24.6	23.3	30.7	28.5	19.8	27.1	15.2
$7,000-14,999	30.5	30.3	31.9	35.0	35.7	35.5	34.5	29.1	27.4
$15,000 and over	50.6	51.5	43.6	41.7	33.6	36.0	45.7	43.8	57.4
Both sexes, 65 years of age and over									
All incomes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under $7,000	54.7	52.8	59.8	60.0	57.1	62.3	59.3	60.6	51.0
$7,000-14,999	29.3	30.3	26.4	27.3	25.4	23.8	30.4	24.4	29.2
$15,000 and over	16.0	16.8	13.8	12.8	17.5	14.0	10.3	15.1	19.3

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 5. Number and percent distribution of persons 17 years of age and over by known usual activity, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Known usual activity, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
All known usual activities									
Both sexes, all ages 17 years and over	152,015	138,610	13,405	6,821	805	2,211	3,739	5,659	850
Males	71,744	64,091	7,652	4,063	414	1,261	2,342	2,987	554
Females	80,271	74,518	5,753	2,757	390	949	1,397	2,671	296
17-44 years	86,491	83,560	2,931	984	82	230	666	1,631	297
45-64 years	43,292	38,643	4,649	2,176	149	644	1,346	2,141	301
65 years and over	22,232	16,406	5,826	3,660	574	1,337	1,728	1,886	252
	Percent distribution								
All ages 17 years and over, both sexes									
All known usual activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	55.5	57.0	39.6	32.0	15.8	24.9	39.5	46.6	54.0
Keeping house	25.6	25.3	29.2	29.2	34.9	31.3	26.8	30.4	21.5
Going to school	8.2	8.8	1.8	1.3	*1.6	*0.9	1.5	2.2	*3.8
Retired	7.1	5.5	24.0	31.1	39.0	34.9	27.2	16.4	17.6
Something else	3.6	3.5	5.4	6.4	8.7	8.0	5.0	4.4	*3.1
All ages 17 years and over, male									
All known usual activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	72.1	74.4	52.8	43.3	21.0	35.2	51.5	62.9	68.4
Going to school	8.8	9.7	2.1	1.6	*1.9	*1.3	1.5	2.5	*4.0
Retired	13.7	10.7	39.4	49.1	72.0	57.3	40.9	28.8	24.7
Something else	5.3	5.3	5.6	6.0	*5.3	6.1	6.0	5.7	*2.7
All ages 17 years and over, female									
All known usual activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	40.6	42.1	21.9	15.2	10.3	11.3	19.4	28.3	26.7
Keeping house	48.5	47.0	68.0	72.1	72.1	72.8	71.7	64.5	61.8
Going to school	7.5	8.0	1.5	*1.0	*1.0	*0.4	*1.4	1.8	*3.4
Retired	1.2	1.0	3.6	4.5	*4.1	5.1	4.3	2.5	*4.4
Something else	2.1	1.9	5.1	7.1	12.3	10.4	3.3	2.9	*3.7
Both sexes, 17-44 years of age									
All known usual activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	63.1	62.8	70.6	67.8	*41.5	63.5	72.7	71.1	76.8
Keeping house	19.0	19.2	15.1	13.8	*26.8	16.1	11.3	17.0	*9.4
Going to school	14.1	14.3	7.9	8.4	*15.9	*5.7	8.3	7.3	*10.4
Something else	3.8	3.7	6.4	10.0	*15.9	*14.3	7.7	4.7	*3.4
Both sexes, 45-64 years of age									
All known usual activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	62.6	63.2	58.2	55.1	47.0	49.8	58.2	60.3	67.4
Keeping house	27.2	27.8	22.2	19.5	*22.1	20.8	18.7	25.4	18.6
Going to school	0.3	0.3	*0.2	*0.2	*	*0.8	*	*0.1	*0.7
Retired	6.9	6.0	14.8	20.1	24.8	22.7	18.6	9.7	*11.0
Something else	3.0	2.8	4.6	5.1	*6.0	5.9	4.5	4.5	*2.3

See footnotes at end of table.

Table 5. Number and percent distribution of persons 17 years of age and over by known usual activity, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Known usual activity, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Percent distribution								
Both sexes, 65 years of age and over									
All known usual activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	12.1	13.2	9.1	8.6	*4.0	6.3	12.1	9.9	*10.7
Keeping house	48.1	50.4	41.8	39.0	39.5	38.9	39.0	47.8	39.3
Going to school	0.3	0.4	*0.1	*0.1	*	*0.1	*	*0.1	*
Retired	35.2	32.2	43.5	46.0	48.3	46.8	44.5	38.2	46.4
Something else	4.3	3.9	5.5	6.3	8.4	7.9	4.4	4.0	*3.6

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 6. Number and percent distribution of persons 3 years of age and over by geographic region, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Geographic region, age, and sex	All persons 3 years of age and over	Hearing ability						
		No hearing trouble	Hearing trouble					
			All levels of hearing trouble[1]	Bilateral hearing trouble			Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice	
	Number of persons in thousands							
All ages 3 years and over, both sexes								
All regions	202,936	188,696	14,240	7,208	842	2,310	3,984	5,969	985
Northeast	46,596	43,560	3,037	1,351	177	450	706	1,446	220
North Central	54,123	50,386	3,736	1,937	242	565	1,109	1,511	269
South	65,677	60,901	4,776	2,544	274	878	1,375	1,909	305
West	36,540	33,850	2,690	1,377	150	418	794	1,102	192
All ages 3 years and over, male								
All regions	97,680	89,548	8,131	4,282	429	1,322	2,483	3,178	621
Northeast	22,324	20,699	1,626	750	91	240	406	737	127
North Central	26,175	24,001	2,174	1,147	135	332	668	835	178
South	31,497	28,780	2,716	1,486	120	501	854	1,023	201
West	17,683	16,068	1,615	898	84	250	555	583	116
All ages 3 years and over, female								
All regions	105,256	99,148	6,108	2,927	413	988	1,501	2,790	363
Northeast	24,272	22,861	1,411	600	86	210	300	709	93
North Central	27,947	26,385	1,562	790	106	233	441	676	91
South	34,181	32,120	2,060	1,058	154	377	522	887	104
West	18,857	17,781	1,075	478	66	167	239	519	76
Both sexes, 3-44 years of age								
All regions	137,312	133,556	3,757	1,365	117	326	909	1,940	431
Northeast	30,521	29,806	714	215	*22	58	132	399	95
North Central	36,792	35,764	1,028	369	*32	78	257	525	129
South	44,502	43,286	1,216	469	35	121	307	616	128
West	25,498	24,700	798	313	*29	69	214	400	79
Both sexes, 45-64 years of age								
All regions	43,357	38,705	4,652	2,178	149	646	1,346	2,143	301
Northeast	10,696	9,622	1,074	425	48	131	238	578	64
North Central	11,340	10,166	1,174	566	40	168	348	532	73
South	13,860	12,369	1,491	720	*31	208	471	661	102
West	7,461	6,548	913	467	*30	140	289	372	63
Both sexes, 65 years of age and over								
All regions	22,266	16,435	5,831	3,665	576	1,339	1,730	1,886	252
Northeast	5,380	4,132	1,248	711	108	262	337	469	61
North Central	5,990	4,456	1,534	1,002	170	319	505	455	67
South	7,316	5,246	2,069	1,356	208	549	598	632	74
West	3,581	2,601	980	597	91	209	291	331	50

See footnotes at end of table.

Table 6. Number and percent distribution of persons 3 years of age and over by geographic region, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Geographic region, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Percent distribution								
All ages 3 years and over, both sexes									
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	23.0	23.1	21.3	18.7	21.0	19.5	17.7	24.2	22.3
North Central	26.7	26.7	26.2	26.9	28.7	24.5	27.8	25.3	27.3
South	32.4	32.3	33.5	35.3	32.5	38.0	34.5	32.0	31.0
West	18.0	17.9	18.9	19.1	17.8	18.1	19.9	18.5	19.5
All ages 3 years and over, male									
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	22.9	23.1	20.0	17.5	21.2	18.2	16.4	23.2	20.5
North Central	26.8	26.8	26.7	26.8	31.5	25.1	26.9	26.3	28.7
South	32.2	32.1	33.4	34.7	28.0	37.9	34.4	32.2	32.4
West	18.1	17.9	19.9	21.0	19.6	18.9	22.4	18.3	18.7
All ages 3 years and over, female									
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	23.1	23.1	23.1	20.5	20.8	21.3	20.0	25.4	25.6
North Central	26.6	26.6	25.6	27.0	25.7	23.6	29.4	24.2	25.1
South	32.5	32.4	33.7	36.1	37.3	38.2	34.8	31.8	28.7
West	17.9	17.9	17.6	16.3	16.0	16.9	15.9	18.6	20.9
Both sexes, 3-44 years of age									
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	22.2	22.3	19.0	15.8	*18.8	17.8	14.5	20.6	22.0
North Central	26.8	26.8	27.4	27.0	*27.4	23.9	28.3	27.1	29.9
South	32.4	32.4	32.4	34.4	29.9	37.1	33.8	31.8	29.7
West	18.6	18.5	21.2	22.9	*24.8	21.2	23.5	20.6	18.3
Both sexes, 45-64 years of age									
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	24.7	24.9	23.1	19.5	32.2	20.3	17.7	27.0	21.3
North Central	26.2	26.3	25.2	26.0	26.8	26.0	25.9	24.8	24.3
South	32.0	32.0	32.1	33.1	*20.8	32.2	35.0	30.8	33.9
West	17.2	16.9	19.6	21.4	*20.1	21.7	21.5	17.4	20.9
Both sexes, 65 years of age and over									
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	24.2	25.1	21.4	19.4	18.8	19.6	19.5	24.9	24.2
North Central	26.9	27.1	26.3	27.3	29.5	23.8	29.2	24.1	26.6
South	32.9	31.9	35.5	37.0	36.1	41.0	34.6	33.5	29.4
West	16.1	15.8	16.8	16.3	15.8	15.6	16.8	17.6	19.8

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Incluces 71,144 persons who did not respond to the Gallaudet scale.

Table 7. Number and percent distribution of persons 3 years of age and over by place of residence, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Place of residence, sex, and age	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
All ages 3 years and over, both sexes									
All places of residence	202,936	188,696	14,240	7,208	842	2,310	3,984	5,969	985
In SMSA, in central city	57,714	53,818	3,896	1,858	279	692	989	1,719	298
In SMSA, not in central city	80,911	75,947	4,965	2,328	260	738	1,296	2,219	384
Not in SMSA	64,310	58,931	5,379	3,022	304	980	1,720	2,031	302
All ages 3 years and over, male									
All places of residence	97,680	89,548	8,131	4,282	429	1,322	2,483	3,178	621
In SMSA, in central city	27,227	25,130	2,097	1,041	123	319	590	866	177
In SMSA, not in central city	39,267	36,371	2,896	1,389	123	420	821	1,241	242
Not in SMSA	31,186	28,047	3,139	1,852	184	583	1,072	1,072	202
All ages 3 years and over, female									
All places of residence	105,256	99,148	6,108	2,927	413	988	1,501	2,790	383
In SMSA, in central city	30,488	28,688	1,799	817	156	273	379	853	121
In SMSA, not in central city	41,644	39,576	2,069	939	137	318	474	979	142
Not in SMSA	33,124	30,884	2,240	1,170	120	397	648	959	100
Both sexes, 3-44 years of age									
All places of residence	137,312	133,556	3,757	1,365	117	326	909	1,940	431
In SMSA, in central city	38,430	37,353	1,076	385	40	91	252	558	130
In SMSA, not in central city	56,377	54,936	1,440	495	41	110	336	754	179
Not in SMSA	42,506	41,266	1,240	485	36	125	322	628	123
Both sexes, 45-64 years of age									
All places of residence	43,357	38,705	4,652	2,178	149	646	1,346	2,143	301
In SMSA, in central city	12,584	11,322	1,262	503	40	154	302	650	101
In SMSA, not in central city	17,295	15,588	1,707	754	49	235	452	826	117
Not in SMSA	13,479	11,795	1,684	921	60	258	591	666	83
Both sexes, 65 years and over									
All places of residence	22,266	16,435	5,831	3,665	576	1,339	1,730	1,886	252
In SMSA, in central city	6,701	5,143	1,558	970	198	347	415	510	68
In SMSA, not in central city	7,240	5,422	1,818	1,079	170	394	508	640	88
Not in SMSA	8,326	5,870	2,455	1,616	208	597	807	737	96
	Percent distribution								
All ages 3 years and over, both sexes									
All places of residence	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In SMSA, in central city	28.4	28.5	27.4	25.8	33.1	25.6	24.3	28.8	30.3
In SMSA, not in central city	39.9	40.2	34.9	32.3	30.9	31.9	32.5	37.2	39.0
Not in SMSA	31.7	31.2	37.8	41.9	36.1	42.4	43.2	34.0	30.7
All ages 3 years and over, male									
All places of residence	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In SMSA, in central city	27.9	28.1	25.8	24.3	28.7	24.1	23.8	27.2	28.5
In SMSA, not in central city	40.2	40.6	35.6	32.4	28.7	31.8	33.1	39.0	39.0
Not in SMSA	31.9	31.3	38.6	43.3	42.9	44.1	43.2	33.7	32.5

See footnotes at end of table.

Table 7. Number and percent distribution of persons 3 years of age and over by place of residence, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Place of residence, sex, and age	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Percent distribution								
All ages 3 years and over, female									
All places of residence	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In SMSA, in central city	29.0	28.9	29.5	27.9	37.8	27.6	25.2	30.6	33.3
In SMSA, not in central city	39.6	39.9	33.9	32.1	33.2	32.2	31.6	35.1	39.1
Not in SMSA	31.5	31.1	36.7	40.0	29.1	40.2	43.2	34.4	27.5
Both sexes, 3-44 years of age									
All places of residence	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In SMSA, in central city	28.0	28.0	28.6	28.2	34.2	27.9	27.7	28.8	30.2
In SMSA, not in central city	41.1	41.1	38.3	38.3	35.0	33.7	37.0	38.9	41.5
Not in SMSA	31.0	30.9	33.0	35.5	30.8	38.3	35.4	32.4	28.5
Both sexes, 45-64 years of age									
All places of residence	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In SMSA, in central city	29.0	29.3	27.1	23.1	26.8	23.8	22.4	30.3	33.6
In SMSA, not in central city	39.9	40.3	36.7	34.6	32.9	36.4	33.6	38.5	38.9
Not in SMSA	31.1	30.5	36.2	42.3	40.3	39.9	43.9	31.1	27.6
Both sexes, 65 years and over									
All places of residence	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In SMSA, in central city	30.1	31.3	26.7	26.5	34.4	25.9	24.0	27.0	27.0
In SMSA, not in central city	32.5	33.0	31.2	29.4	29.5	29.4	29.4	33.9	34.9
Not in SMSA	37.4	35.7	42.1	44.1	36.1	44.6	46.6	39.1	38.1

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 8. Number and percent distribution of persons 3 years of age and over by limitation of activity status, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Sex, age, and limitation of activity status	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
All ages 3 years and over, both sexes									
All limitation statuses	202,936	188,696	14,240	7,208	842	2,310	3,984	5,969	985
Limited in major activity	21,826	16,975	4,850	2,988	464	1,161	1,343	1,630	203
Limited in other activity	6,585	5,471	1,115	614	103	197	313	443	52
Not limited	174,525	166,250	8,275	3,606	276	952	2,328	3,896	729
All ages 3 years and over, male									
All limitation statuses	97,680	89,548	8,131	4,282	429	1,322	2,483	3,178	621
Limited in major activity	11,055	8,224	2,832	1,808	277	687	835	875	129
Limited in other activity	3,103	2,548	555	323	35	117	171	196	*32
Not limited	83,522	78,777	4,745	2,151	118	518	1,478	2,107	460
All ages 3 years and over, female									
All limitation statuses	105,256	99,148	6,108	2,927	413	988	1,501	2,790	363
Limited in major activity	10,770	8,752	2,018	1,179	187	474	509	755	75
Limited in other activity	3,483	2,923	560	291	68	80	142	247	*20
Not limited	91,003	87,473	3,530	1,456	158	434	850	1,789	269
Both sexes, 3-44 years of age									
All limitation statuses	137,312	133,556	3,757	1,365	117	326	909	1,940	431
Limited in major activity	5,462	4,972	490	241	62	85	92	210	37
Limited in other activity	3,369	3,025	344	162	*23	53	84	168	*11
Not limited	128,481	125,558	2,923	963	*33	188	732	1,562	384
Both sexes, 45-64 years of age									
All limitation statuses	43,357	38,705	4,652	2,178	149	646	1,346	2,143	301
Limited in major activity	8,050	6,545	1,505	796	64	287	433	631	65
Limited in other activity	1,953	1,587	366	191	*16	65	110	155	*18
Not limited	33,355	30,574	2,781	1,191	69	294	803	1,356	219
Both sexes, 65 years and over									
All limitation statuses	22,266	16,435	5,831	3,685	576	1,339	1,730	1,886	252
Limited in major activity	8,314	5,458	2,856	1,951	338	789	818	789	102
Limited in other activity	1,263	859	405	262	64	79	118	120	*23
Not limited	12,683	10,118	2,571	1,453	174	470	793	978	127
	Percent distribution								
All ages 3 years and over, both sexes									
All limitation statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Limited in major activity	10.8	9.0	34.1	41.5	55.1	50.3	33.7	27.3	20.6
Limited in other activity	3.2	2.9	7.8	8.5	12.2	8.5	7.9	7.4	5.3
Not limited	86.0	88.1	58.1	50.0	32.8	41.2	58.4	65.3	74.0
All ages 3 years and over, male									
All limitation statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Limited in major activity	11.3	9.2	34.8	42.2	64.6	52.0	33.6	27.5	20.8
Limited in other activity	3.2	2.8	6.8	7.5	8.2	8.9	6.9	6.2	*5.2
Not limited	85.5	88.0	58.4	50.2	27.5	39.2	59.5	66.3	74.1

See footnotes at end of table.

Table 8. Number and percent distribution of persons 3 years of age and over by limitation of activity status, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Sex, age, and limitation of activity status	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Percent distribution								
All ages 3 years and over, female									
All limitation statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Limited in major activity	10.2	8.8	33.0	40.3	45.3	48.0	33.9	27.1	20.7
Limited in other activity	3.3	2.9	9.2	9.9	16.5	8.1	9.5	8.9	*5.5
Not limited	86.5	88.2	57.8	49.7	38.3	43.9	56.6	64.1	74.1
Both sexes, 3-44 years of age									
All limitation statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Limited in major activity	4.0	3.7	13.0	17.7	53.0	26.1	10.1	10.8	8.6
Limited in other activity	2.5	2.3	9.2	11.9	*19.7	16.3	9.2	8.7	*2.8
Not limited	93.6	94.0	77.8	70.5	*28.2	57.7	80.5	80.5	99.1
Both sexes, 45-64 years of age									
All limitation statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Limited in major activity	18.6	16.9	32.4	36.5	43.0	44.4	32.2	29.4	21.6
Limited in other activity	4.5	4.1	7.9	8.8	*10.7	10.1	8.2	7.2	*6.0
Not limited	76.9	79.0	59.8	54.7	46.3	45.5	59.7	63.3	72.8
Both sexes, 65 years of age and over									
All limitation statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Limited in major activiy	37.3	33.2	49.0	53.2	58.7	58.9	47.3	41.8	40.5
Limited in other activity	5.7	5.2	6.9	7.1	11.1	5.9	6.8	6.4	*9.1
Not limited	57.0	61.6	44.1	39.6	30.2	35.1	45.8	51.9	50.4

[1]Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2]Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 9. Number and percent distribution of persons 3 years of age and over who are limited in activity due to chronic conditions by whether hearing loss is a cause of the limitation, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Hearing loss as a cause of limitation in activity, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
All persons limited in activity									
All ages 3 years and over, both sexes				Number of persons in thousands					
Hearing loss a cause of limitation	28,411	22,446	5,965	3,602	567	1,358	1,656	2,073	255
Hearing loss the main cause	413	—	413	310	140	99	68	96	*7
Hearing loss a secondary cause	281	—	281	209	64	83	62	60	*9
Hearing loss not a cause	27,717	22,446	5,270	3,083	363	1,177	1,526	1,917	239
All ages 3 years and over, male									
Hearing loss a cause of limitation	14,158	10,771	3,387	2,131	312	804	1,005	1,071	161
Hearing loss the main cause	259	—	259	185	75	63	45	74	*.
Hearing loss a secondary cause	186	—	186	135	39	53	42	44	*4
Hearing loss not a cause	13,713	10,771	2,942	1,811	197	688	918	954	157
All ages 3 years and over, female									
Hearing loss a cause of limitation	14,253	11,675	2,578	1,471	255	554	651	1,001	94
Hearing loss the main cause	154	—	154	125	65	38	*22	*22	*7
Hearing loss a secondary cause	96	—	96	74	*25	*29	*20	*16	*5
Hearing loss not a cause	14,003	11,675	2,329	1,272	166	489	609	963	82
Both sexes, 3-44 years of age									
Hearing loss a cause of limitation	8,831	7,997	833	402	84	138	177	378	48
Hearing loss the main cause	223	—	223	149	67	42	38	68	*5
Hearing loss a secondary cause	45	—	45	*25	*2	*10	*13	*18	*.
Hearing loss not a cause	8,563	7,997	566	228	*15	85	126	291	42
Both sexes, 45-64 years of age									
Hearing loss a cause of limitation	10,003	8,132	1,871	987	81	352	543	787	82
Hearing loss the main cause	104	—	104	80	*21	38	*18	*25	*.
Hearing loss a secondary cause	73	—	73	48	*13	*17	*18	*25	*.
Hearing loss not a cause	9,826	8,132	1,694	859	46	297	507	737	82
Both sexes, 65 years and over									
Hearing loss a cause of limitation	9,577	6,317	3,260	2,213	402	869	936	908	125
Hearing loss the main cause	86	—	86	61	52	*18	*11	*3	*2
Hearing loss a secondary cause	164	—	164	136	49	56	*31	*17	*9
Hearing loss not a cause	9,328	6,317	3,011	1,996	301	795	894	888	114
All ages 3 years and over, both sexes				Percent distribution					
Hearing loss a cause of limitation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing loss the main cause	1.5	—	6.9	8.6	24.7	7.3	4.1	4.6	*2.7
Hearing loss a secondary cause	1.0	—	4.7	5.8	11.3	6.1	3.7	2.9	*3.5
Hearing loss not a cause	97.6	100.0	88.3	85.6	64.0	86.7	92.1	92.5	93.7
All ages 3 years and over, male									
Hearing loss a cause of limitation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing loss the main cause	1.8	—	7.6	8.7	24.0	7.8	4.5	6.9	*0.0
Hearing loss a secondary cause	1.3	—	5.5	6.3	12.5	6.6	4.2	4.1	*2.5
Hearing loss not a cause	96.9	100.0	86.9	85.0	63.1	85.6	91.3	89.1	97.5
All ages 3 years and over, female									
Hearing loss a cause of limitation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing loss the main cause	1.1	—	6.0	8.5	25.5	6.5	*3.4	*2.2	*7.4
Hearing loss a secondary cause	0.7	—	3.7	5.0	*9.8	*5.2	*3.1	*1.6	*5.3
Hearing loss not a cause	98.2	100.0	90.3	86.5	65.1	88.3	93.5	96.2	87.2

See footnotes at end of table.

Table 9. Number and percent distribution of persons 3 years of age and over who are limited in activity due to chronic conditions by whether hearing loss is a cause of the limitation, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Hearing loss as a cause of limitation in activity, age, and sex	All persons 3 years of age and over	Hearing ability							
			Hearing trouble						
				Bilateral hearing trouble					
		No hearing trouble	All levels of hearing trouble[1]	All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice	Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
All persons limited in activity									
Both sexes, 3-44 years of age					Percent distribution				
Hearing loss a cause of limitation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing loss the main cause	2.5	...	26.8	37.1	79.8	30.4	21.5	18.0	*10.4
Secondary cause	0.5	...	5.4	*6.2	*2.4	*7.2	*7.3	*4.8	*0.0
Hearing loss not a cause	97.0	100.0	67.9	56.7	*17.9	61.6	71.2	77.0	87.5
Both sexes, 45-64 years of age									
Hearing loss a cause of limitation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing loss the main cause	1.0	...	5.6	8.1	*25.9	10.8	*3.3	*3.2	*0.0
Hearing loss a secondary cause	0.7	...	3.9	4.9	*16.0	*4.8	*3.3	*3.2	*0.0
Hearing loss not a cause	98.2	100.0	90.5	87.0	56.8	84.4	93.4	93.6	100.0
Both sexes, 65 years and over									
Hearing loss a cause of limitation	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing loss the main cause	0.9	...	2.6	3.7	12.9	*2.1	*1.2	*0.3	*1.6
Hearing loss a secondary cause	1.7	...	5.0	6.1	12.2	6.4	*3.3	*1.9	*7.2
Hearing loss not a cause	97.4	100.0	92.4	90.2	74.9	91.5	95.5	97.8	91.2

[1] Includes 79,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 10. Number and percent distribution of persons 3 years of age and over by known annual days in bed, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Known annual days in bed, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
Known annual days in bed									
Both sexes, all ages 3 years and over	199,559	185,415	14,144	7,160	832	2,285	3,972	5,935	976
Males	96,086	88,005	8,081	4,256	422	1,307	2,479	3,164	614
Females	103,473	97,411	6,062	2,903	409	977	1,493	2,771	361
3-44 years	135,112	131,371	3,741	1,365	117	326	909	1,926	429
45-64 years	42,637	38,013	4,625	2,163	147	638	1,340	2,135	296
65 years and over	21,809	15,031	5,778	3,632	567	1,321	1,723	1,874	250
	Percent distribution								
All ages 3 years and over, both sexes									
All known annual days in bed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No days in bed	54.7	54.9	51.4	51.7	54.1	49.3	52.5	51.6	49.4
1-7 days in bed	33.5	34.0	27.2	24.3	23.4	20.9	26.6	29.2	36.0
8 or more days in bed	11.8	11.0	21.3	23.9	22.4	29.8	20.9	19.2	14.7
All ages 3 years and over, male									
All known annual days in bed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No days in bed	57.5	57.9	53.3	53.2	55.9	51.5	53.4	53.4	54.2
1-7 days in bed	32.6	33.1	27.5	24.3	22.5	19.9	27.1	30.2	34.4
8 or more days in bed	9.9	9.0	19.2	22.5	21.6	28.6	19.5	16.4	11.4
All ages 3 years and over, female									
All known annual days in bed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No days in bed	52.1	52.3	49.0	49.7	52.3	46.5	51.0	49.5	41.3
1-7 days in bed	34.4	34.9	26.9	24.3	24.4	22.1	25.7	28.0	38.8
8 or more days in bed	13.5	12.9	24.1	26.1	23.2	31.4	23.4	22.4	19.9
Both sexes, 3-44 years of age									
All known annual days in bed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No days in bed	51.6	51.9	40.8	41.5	47.0	36.5	42.4	40.5	39.6
1-7 days in bed	38.8	38.7	42.3	40.9	38.5	39.3	42.0	42.2	47.6
8 or more days in bed	9.6	9.4	16.9	17.7	*14.5	24.2	15.6	17.3	12.8
Both sexes, 45-64 years of age									
All known annual days in bed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No days in bed	60.3	61.3	51.7	50.9	61.9	51.4	49.2	52.6	53.4
1-7 days in bed	25.2	25.0	27.0	25.4	*22.4	20.8	28.3	27.8	31.4
8 or more days in bed	14.5	13.7	21.3	23.7	*15.6	27.9	22.5	19.7	15.2
Both sexes, 65 years and over									
All known annual days in bed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No days in bed	62.9	64.6	58.2	56.1	53.6	51.5	60.4	62.0	61.2
1-7 days in bed	17.2	17.0	17.7	17.5	20.6	16.4	17.1	17.5	22.0
8 or more days in bed	19.9	18.3	24.1	26.4	25.7	32.1	22.5	20.5	17.2

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 11. Number and percent distribution of persons 3 years of age and over by known annual physician contacts, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Known annual physician contacts, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
Known annual physician contacts	Number of persons in thousands								
Both sexes, all ages 3 years and over	199,317	185,334	13,983	7,082	817	2,256	3,937	5,878	952
Males	95,701	87,733	7,968	4,200	413	1,289	2,450	3,126	599
Females	103,616	97,601	6,015	2,882	404	967	1,487	2,752	353
3-44 years	135,028	131,326	3,702	1,344	113	321	896	1,918	422
45-64 years	42,555	37,966	4,589	2,160	145	640	1,337	2,112	289
65 years and over	21,734	16,041	5,692	3,579	558	1,295	1,705	1,848	241
All ages 3 years and over, both sexes	Percent distribution								
All known annual physician contacts	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No physician contacts	25.1	25.7	17.2	15.7	16.8	15.0	15.7	18.6	19.0
1-5 physician contacts	57.5	57.9	52.8	52.2	52.1	47.8	54.7	53.3	55.7
6 or more physician contacts	17.3	16.4	30.0	32.1	31.2	37.2	29.6	28.1	25.3
All ages 3 years and over, male									
All known annual physician contacts	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No physician contacts	29.8	30.7	19.8	16.9	16.9	16.0	17.0	23.0	23.9
1-5 physician contacts	56.9	57.1	54.1	53.7	55.0	49.3	56.0	54.6	55.1
6 or more physician contacts	13.3	12.2	26.1	29.4	27.8	34.8	26.9	22.4	21.2
All ages 3 years and over, female									
All known annual physician contacts	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No physician contacts	20.8	21.3	13.7	14.0	16.3	13.5	13.6	13.6	10.8
1-5 physician contacts	58.1	58.6	51.1	50.0	49.0	45.9	52.4	51.8	56.9
6 or more physician contacts	21.0	20.2	35.2	36.1	34.7	40.4	34.0	34.6	32.3
Both sexes, 3-44 years of age									
All known annual physician contacts	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No physician contacts	26.1	26.3	19.4	15.6	*14.2	15.3	16.0	21.6	20.9
1-5 physician contacts	59.8	59.9	56.3	58.0	64.6	52.6	59.0	55.6	54.7
6 or more physician contacts	14.2	13.9	24.3	26.3	*20.4	32.4	25.0	22.8	24.4
Both sexes, 45-64 years of age									
All known annual physician contacts	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No physician contacts	24.9	25.8	18.1	17.3	*17.9	16.4	17.3	18.3	22.1
1-5 physician contacts	53.7	53.8	52.5	51.7	54.5	45.2	54.6	53.1	55.7
6 or more physician contacts	21.4	20.4	29.4	31.1	27.6	38.4	28.0	28.6	22.5
Both sexes, 65 years and over									
All known annual physician contacts	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No physician contacts	19.7	21.4	15.1	14.8	16.8	14.2	14.4	15.9	*12.0
1-5 physician contacts	51.1	51.2	50.8	50.3	48.9	48.0	52.4	51.1	57.7
6 or more physician contacts	29.2	27.5	34.2	35.0	34.2	37.8	33.2	33.0	30.3

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 12. Number and percent distribution of persons 3 years of age and over by respondent-assessed health status, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Respondent-assessed health status, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
	Number of persons in thousands								
Both sexes, all ages 3 years and over	201,976	187,837	14,139	7,156	835	2,293	3,957	5,927	981
Males	97,248	89,167	8,081	4,256	424	1,312	2,473	3,157	619
Females	104,728	98,670	6,058	2,900	411	981	1,484	2,770	362
3-44 years	136,784	133,047	3,736	1,361	116	326	907	1,927	430
45-64 years	43,097	38,483	4,614	2,156	149	642	1,327	2,127	301
65 years and over	22,095	16,307	5,788	3,638	570	1,325	1,722	1,874	250
	Percent distribution								
All ages 3 years and over, both sexes									
All respondent-assessed health statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excellent	48.7	50.1	29.9	26.2	24.1	20.5	29.8	31.9	45.9
Good	38.7	38.6	38.9	37.9	35.4	35.2	40.2	40.9	35.2
Fair	9.7	8.9	21.0	23.1	25.0	26.8	20.5	19.6	13.9
Poor	2.9	2.4	10.1	12.8	15.4	17.5	9.5	7.6	5.1
All ages 3 years and over, male									
All respondent-assessed health statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excellent	51.8	53.5	32.7	27.6	21.5	19.7	32.6	36.6	48.9
Good	36.7	36.5	38.1	37.9	37.7	35.3	39.5	39.6	32.3
Fair	8.5	7.6	19.0	21.1	21.9	26.2	18.3	16.9	14.4
Poor	3.0	2.4	10.1	13.4	18.6	18.8	9.6	6.9	*4.4
All ages 3 years and over, female									
All respondent-assessed health statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excellent	45.8	47.0	26.1	24.1	26.8	21.7	25.1	26.6	40.6
Good	40.5	40.6	40.0	38.0	32.8	35.0	41.4	42.3	40.1
Fair	10.8	10.1	23.8	26.0	28.2	27.6	24.3	22.8	13.0
Poor	2.8	2.4	10.1	11.9	12.2	15.7	9.2	8.3	*6.4
Both sexes, 3-44 years of age									
All respondent-assessed health statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excellent	55.7	56.1	41.4	38.5	35.3	28.8	42.2	40.8	53.3
Good	37.5	37.3	42.1	41.3	37.1	44.2	41.1	43.6	37.4
Fair	5.8	5.6	12.8	14.5	*20.7	18.7	12.2	12.6	*7.7
Poor	1.1	1.0	3.8	5.7	*6.9	*8.3	4.5	2.9	*1.6
Both sexes, 45-64 years of age									
All respondent-assessed health statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excellent	36.2	37.3	27.4	25.0	30.2	18.2	27.7	27.6	44.2
Good	41.7	42.1	38.6	37.8	34.9	34.3	39.9	40.5	32.2
Fair	16.1	15.5	21.2	21.9	*23.5	26.6	19.7	21.2	14.6
Poor	6.0	5.2	12.8	15.3	*12.1	20.9	12.7	10.8	*9.0

See footnotes at end of table.

Table 12. Number and percent distribution of persons 3 years of age and over by respondent-assessed health status, age, and sex, according to hearing ability: United States, 1977—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Respondent-assessed health status, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
Both sexes, 65 years and over	Percent distribution								
All respondent-assessed health statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excellent	29.7	31.5	24.5	22.3	20.2	19.6	24.9	27.7	35.2
Good	40.1	41.2	37.2	36.8	35.3	33.4	40.1	38.5	34.8
Fair	21.7	20.1	26.3	26.9	26.5	28.9	25.5	25.1	24.0
Poor	8.4	7.2	12.0	14.0	18.1	18.1	9.6	8.8	*6.4

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

Table 13. Number and percent distribution of persons 3 years of age and over by known hearing aid use, age, and sex, according to hearing ability: United States, 1977

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Known hearing aid use, age, and sex	All persons 3 years of age and over	Hearing ability							
		No hearing trouble	Hearing trouble						
			All levels of hearing trouble[1]	Bilateral hearing trouble				Unilateral hearing trouble, all levels	Hearing trouble borderline or unclear whether unilateral or bilateral
				All speech comprehension statuses[2]	At best, can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice		
Known hearing aid use	Number of persons in thousands								
Both sexes, all ages 3 years and over	202,846	188,627	14,219	7,196	837	2,307	3,981	5,961	985
Males	97,643	89,516	8,126	4,277	428	1,321	2,481	3,178	621
Females	105,203	99,110	6,093	2,919	409	986	1,500	2,783	363
3-44 years	137,254	133,499	3,755	1,365	117	326	909	1,938	431
45-64 years	43,343	38,696	4,647	2,174	149	644	1,344	2,141	301
65 years and over	22,249	16,432	5,818	3,656	570	1,337	1,728	1,882	252
All ages 3 years and over, both sexes	Percent distribution								
All hearing aid statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Uses	0.9	0.1	12.4	19.6	55.8	26.0	8.2	5.4	*3.1
Does not use	99.1	99.9	87.6	80.4	44.2	74.0	91.8	94.6	96.9
All ages 3 years and over, male									
All hearing aid statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Uses	1.0	*0.0	11.9	17.8	52.8	24.3	8.2	5.5	*3.9
Does not use	99.0	100.0	88.1	82.2	47.2	75.7	91.8	94.5	96.1
All ages 3 years and over, female									
All hearing aid statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Uses	0.8	0.1	13.2	22.2	58.9	28.3	8.2	5.2	*1.9
Does not use	99.2	99.9	86.8	77.8	41.1	71.7	91.8	94.7	98.1
Both sexes, 3-44 years of age									
All hearing aid statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Uses	0.1	*0.0	4.1	9.0	48.7	14.4	*2.0	*1.5	*0.0
Does not use	99.9	100.0	95.9	91.0	52.1	85.6	98.0	98.5	100.0
Both sexes, 45-64 years of age									
All hearing aid statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Uses	1.1	*0.1	9.7	16.3	51.7	28.7	6.5	4.1	*3.0
Does not use	98.9	99.9	90.3	83.8	48.3	71.3	93.4	95.9	97.0
Both sexes, 65 years and over									
All hearing aid statuses	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Uses	5.4	0.3	19.9	25.4	58.4	27.5	12.7	10.8	*8.7
Does not use	94.6	99.7	80.1	74.6	41.6	72.5	87.3	89.2	91.3

[1] Includes 78,221 persons who did not respond to either hearing scale. Excludes persons reporting tinnitus only.
[2] Includes 71,144 persons who did not respond to the Gallaudet scale.

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Appendix I. Technical notes on methods

Background of this report

This report is one of a series of statistical reports prepared by the National Center for Health Statistics (NCHS). It is based on information collected in a continuing nationwide sample of households in the National Health Interview Survey (NHIS).

The National Health Interview Survey utilizes a questionnaire that obtains information on personal and demographic characteristics, illnesses, injuries, impairments, chronic conditions, and other health topics. As data relating to each of these various broad topics are tabulated and analyzed, separate reports are issued that cover one or more of the specific topics.

The population covered by the sample for the National Health Interview Survey is the civilian noninstitutionalized population of the United States living at the time of the interview. The sample does not include members of the Armed Forces or U.S. nationals living in foreign countries. It should also be noted that the estimates shown do not represent a complete measure of any given topic during the specified calendar period, since data are not collected in the interview for persons who died during the reference period. For many types of statistics collected in the survey, the reference period covers the 2 weeks prior to the interview week. For such a short period, the contribution by decedents to a total inventory of conditions or services should be very small. However, the contribution by decedents during a long reference period (e.g., 1 year) might be sizable, especially for older persons.

Statistical design of the National Health Interview Survey

General plan.—The sampling plan of the survey follows a multistage probability design that permits a continuous sampling of the civilian noninstitutionalized population of the United States. The sample is designed in such a way that the sample of households interviewed each week is representative of the target population and that weekly samples are additive over time. This feature of the design permits both continuous measurement of characteristics of samples and more detailed analysis of less common characteristics and smaller categories of health-related items. The continuous collection has administrative and operational advantages as well as technical assets, since it permits fieldwork to be handled with an experienced, stable staff.

The overall sample was designed so that tabulations could be provided for each of the four major geographic regions and for selected places of residence in the United States.

The first stage of the sample design consists of drawing a sample of 376 primary sampling units (PSU's) from approximately 1,900 geographically defined PSU's. A PSU consists of a county, a small group of contiguous counties, or a standard metropolitan statistical area. The PSU's collectively cover the 50 States and the District of Columbia.

With no loss in general understanding, the remaining stages can be combined and treated in this discussion as an ultimate stage. Within PSU's, then, ultimate stage units called segments are defined in such a manner that each segment contains an expected four households. Three general types of segments are used:

Area segments, which are defined geographically.

List segments, using 1970 census registers as the frame.

Permit segments, using updated lists of building permits issued in sample PSU's since 1970.

Census address listings were used for all areas of the country where addresses were well defined and could be used to locate housing units. In general the list frame included the larger urban areas of the United States, from which about two-thirds of the NHIS sample was selected.

The usual NHIS sample consists of approximately

12,000 segments containing about 50,000 assigned households, of which 9,000 were vacant, demolished, or occupied by persons not in the scope of the survey. The 41,000 eligible occupied households yield a probability sample of about 111,000 persons.

Descriptive material on data collection, field procedures, and questionnaire development in NHIS,[10,11] as well as a detailed description of the sample design and estimation procedure,[12,13] have been published.

Collection of data.—Field operations for the survey are performed by the U.S. Bureau of the Census under specifications established by the National Center for Health Statistics. In accordance with these specifications the Bureau of the Census participates in survey planning, selects the sample, and conducts the field interviewing as an agent of NCHS. The data are coded, edited, and tabulated by NCHS.

Estimating procedures.—Since the design of NHIS is a complex multistage probability sample, it is necessary to use complex procedures in the derivation of estimates. Four basic operations are involved.

1. *Inflation by the reciprocal of the probability of selection.*—The probability of selection is the product of the probabilities of selection from each step of selection in the design (PSU, segment, and household).
2. *Nonresponse adjustment.*—The estimates are inflated by a multiplication factor that has as its numerator the number of sample households in a given segment and as its denominator the number of households interviewed in that segment.
3. *First-stage ratio adjustment.*—Sampling theory indicates that the use of auxiliary information that is highly correlated with the variables being estimated improves the reliability of the estimates. To reduce the variability between PSU's within a region, the estimates are ratio-adjusted to the 1970 populations within 12 race-residence classes.
4. *Poststratification by age-sex-race.*—The estimates are ratio-adjusted within each of 60 age-sex-race cells to an independent estimate of the population of each cell for the survey period. These independent estimates are prepared by the Bureau of the Census. Both the first-stage and poststratified ratio adjustments take the form of the multiplication factors applied to the weight of each elementary unit (person, household, condition, and hospitalization).

The effect of the ratio-estimating process is to make the sample more closely representative of the civilian noninstitutionalized population by age, sex, race, and residence, which thereby reduces sampling variance.

As noted, each week's sample represents the population living during that week and characteristics of the population. Consolidation of samples over a time period, e.g., a calendar quarter, produces estimates of average characteristics of the U.S. population for that period, in this case the calendar quarter. Similarly, population data for a year are averages of the four quarterly figures.

For prevalence statistics, such as number of persons with speech impairments or number of persons classified by time interval since last physician visit, figures are first calculated for each calendar quarter by averaging estimates for all weeks of interviewing in the quarter. Prevalence data for a year are then obtained by averaging the four quarterly figures.

For other types of statistics—namely those measuring the number of occurrences during a specified time period—such as incidence of acute conditions, number of disability days, and number of visits to a doctor or dentist, a similar computational procedure is used, but the statistics are interpreted differently. For these items, the questionnaire asks for the respondent's experience over the 2 calendar weeks prior to the week of interview. In such instances the estimated quarterly total for the statistic is 6.5 times the average 2-week estimate produced by the 13 successive samples taken during the period. The annual total is the sum of the four quarters. Thus the experience of persons *interviewed during a year*—experience that actually occurred for each person in a 2-calendar-week interval prior to the week of interview—is treated as though it measured the total of such experience *during the year.* Such interpretation leads to no significant bias.

Explanation of hospital recall.—The survey questionnaire uses a 12-month recall period for hospitalizations. That is, the respondent is asked to report hospitalizations that occurred during the 12 months prior to the week of interview. Information is also obtained as to the date of entry into the hospital and duration of stay. Analysis of this information and also the results of special studies have shown that there is an increase in underreporting of hospitalizations with increase in time interval between the discharge and the interview. Exclusive of the hospital experience of decedents, the net underreporting with a 12-month recall is in the neighborhood of 10 percent, but underreporting of discharges within 6 months of the week of interview is estimated to be less than 5 percent. For this reason hospital discharge data in this report are based on hospital discharges reported to have occurred within 6 months of the week of interview. Since the interviews were evenly distributed according to weekly probability samples throughout any interviewing year, no seasonal bias was introduced by doubling the 6-month recall data to produce an annual estimate for that year of interviewing. Doubling the 6-month data in effect imputes to the entire year preceding the interview the

rate of hospital discharges actually observed during the 6 months prior to interview. However, estimates of the number of persons with hospital episodes (as opposed to estimates of the number of hospital discharges) are based on 12-month recall data, since a person's 12-month experiences cannot be obtained by doubling his most recent 6-month experience.

General qualifications

Nonresponse.—Data were adjusted for nonresponse by a procedure that imputes to persons in a household who were not interviewed the characteristics of persons in households in the same segment who were interviewed. Interviews were completed in 97.1 percent of the sample households.

The interview process.—The statistics presented in this report are based on replies obtained in interviews with persons in the sample households. Each person 19 years of age and over present at the time of interview was interviewed individually. For children and for adults not present in the home at the time of the interview, the information was obtained from a related household member such as a spouse or the mother of a child.

There are limitations to the accuracy of diagnostic and other information collected in household interviews. For diagnostic information, the household respondent can usually pass on to the interviewer only the information the physician has given to the family. For conditions not medically attended, diagnostic information is often no more than a description of symptoms. However, other facts, such as the number of disability days caused by the condition, can be obtained more accurately from household members than from any other source, since only the persons concerned are in a position to report this information.

Rounding of numbers.—The original tabulations on which the data in this report are based show all estimates to the nearest whole unit. All consolidations were made from the original tabulations using the estimates to the nearest unit. In the final published tables, the figures are rounded to the nearest thousand, although these are not necessarily accurate to that detail. Devised statistics such as rates and percent distributions are computed after the estimates on which these are based have been rounded to the nearest thousand.

Population figures.—Some of the published tables include population figures for specified categories. Except for certain overall totals by age, sex, and race, which are adjusted to independent estimates, these figures are based on the sample of households in NHIS. These are given primarily to provide denominators for rate computation, and for this purpose are more appropriate for use with the accompanying measures of health characteristics than other population data that may be available. With the exception of the overall totals by age, sex, and race mentioned above, the population figures differ from figures (which are derived from different sources) published in reports of the Bureau of the Census. Official population estimates are presented in Bureau of the Census reports in Series P-20, P-25, and P-60.

Reliability of estimates

Since the statistics presented in this report are based on a sample, they will differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and interviewing personnel and procedures.

As in any survey, the results are also subject to reporting and processing errors and errors due to nonresponse. To the extent possible, these types of errors were kept to a minimum by methods built into survey procedures.[14] Although it is very difficult to measure the extent of bias in the National Health Interview Survey, a number of studies have been conducted to study this problem. The results have been published in several reports.[15-18] The standard errors shown in this report were computed using the balanced half-sample replication procedure.

The standard error is primarily a measure of sampling variability, that is, the variations that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the standard error also reflects part of the variation that arises in the measurement process. It does not include estimates of any biases that might be in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference would be less than twice the standard error and about 99 out of 100 that it would be less than 2½ times as large.

Standard error charts.—The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percent of the estimate. For this report, asterisks are shown for any cell with more than a 30-percent relative standard error. Included in this appendix are charts from which the relative standard errors can be determined for estimates shown in the report. To derive relative errors that would be applicable to a wide variety of health statistics and that could be prepared at a moderate cost, a number of approximations were required. As a result, the charts provide an estimate of the approximate relative standard error rather than the precise error for any specific aggregate or percent.

Three classes of statistics for the health survey are identified for purposes of estimating variances.

1. *Narrow range.*—This class consists of (1) statistics that estimate a population attribute, e.g., the number of persons in a particular income group, and (2) statistics for which the measure for a single individual during the reference period used in data collection is usually either 0 to 1 and, on occasion, may take on the value 2 or very rarely 3.
2. *Medium range.*—This class consists of other statistics for which the measure for a single individual during the reference period used in data collection will rarely lie outside the range 0 to 5.
3. *Wide range.*—This class consists of statistics for which the measure for a single individual during the reference period used in data collection can range from 0 to a number in excess of 5, e.g., the number of days of bed disability.

In addition to classifying variables according to whether they are narrow-, medium-, or wide-range, statistics in the survey are further classified as to whether they are based on a reference period of 2 weeks, 6 months, or 12 months.

General rules for determining relative standard errors.—The following rules will enable the reader to determine approximate relative standard errors from the charts for estimates presented in this report. These charts represent standard errors of NHIS data. They should be used in preference to the charts that have appeared in all previous Series 10 publications.

Rule 1. *Estimates of aggregates*: Approximate relative standard errors for estimates of aggregates such as the number of persons with a given characteristic are obtained from figure I. The number of persons in the total U.S. population or in an age-sex-color class of the total population is adjusted to official Bureau of the Census figures and is not subject to sampling error.

Rule 2. *Estimates of percentages in a percent distribution*: Relative standard errors for percents in a percent distribution of a total are obtained from figure II. For values which do not fall on the curves presented in the chart, visual interpolation will provide a satisfactory approximation.

Rule 3. *Estimates of rates where the numerator is a subclass of the denominator*: This rule applies for prevalence rates or where a unit of the numerator occurs, with few exceptions, only once for any one unit in the denominator. For example, in computing the rate of visual impairments per 1,000 population, the numerator consisting of persons with the impairment is a subclass of the denominator, which includes all persons in the population. Such rates if converted to rates per 100 may be treated as though they were percents and the relative standard errors obtained from the percent chart for population estimates. Rates per 1,000, or on any other base, must first be converted to rates per 100; then the percent chart will provide the relative standard error per 100.

Rule 4. *Estimates of rates where the numerator is not a subclass of the denominator*: This rule applies where a unit of the numerator often occurs more than once for any one unit in the denominator. For example, in the computation of the number of persons injured per 100 currently employed persons per year, it is possible that a person in the denominator could have sustained more than one of the injuries included in the numerator. Approximate relative standard errors for rates of this kind may be computed as follows:

(a) Where the denominator is the total U.S. population or includes all persons in one or more of the age-sex-color groups of the total population, the relative error of the rate is equivalent to the relative error of the numerator, which can be obtained directly from the appropriate chart.

(b) In other cases the relative standard error of the numerator and of the denominator can be obtained from the appropriate curve. Square each of these relative errors, add the resulting values, and extract the square root of the sum. This procedure will result in an upper bound on the standard error and will overstate the error to the extent that the correlation between numerator and denominator is greater than zero.

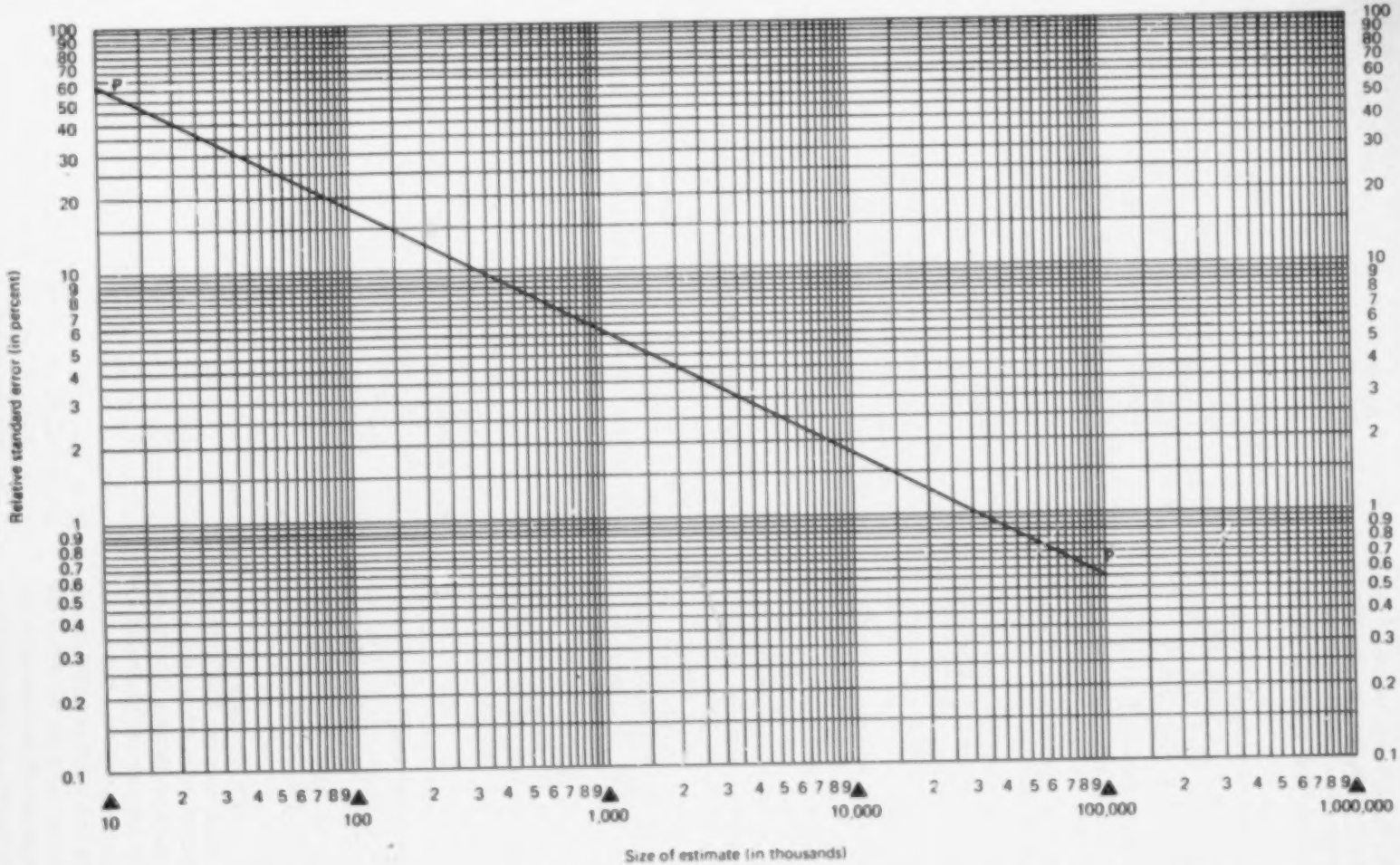
Rule 5. *Estimates of difference between two statistics (mean, rate, total, etc.)*: The standard error of a difference is approximately the square root of the sum of the squares of each standard error considered separately. A formula for the standard error of a difference,

$$d = X_1 - X_2$$

is

$$\sigma_d = \sqrt{(X_1 V_{x_1})^2 + (X_2 V_{x_2})^2}$$

where X_1 is the estimate for class 1, X_2 is the estimate for class 2, and V_{x_1} and V_{x_2} are the relative errors of X_1 and X_2 respectively. This formula will represent the actual

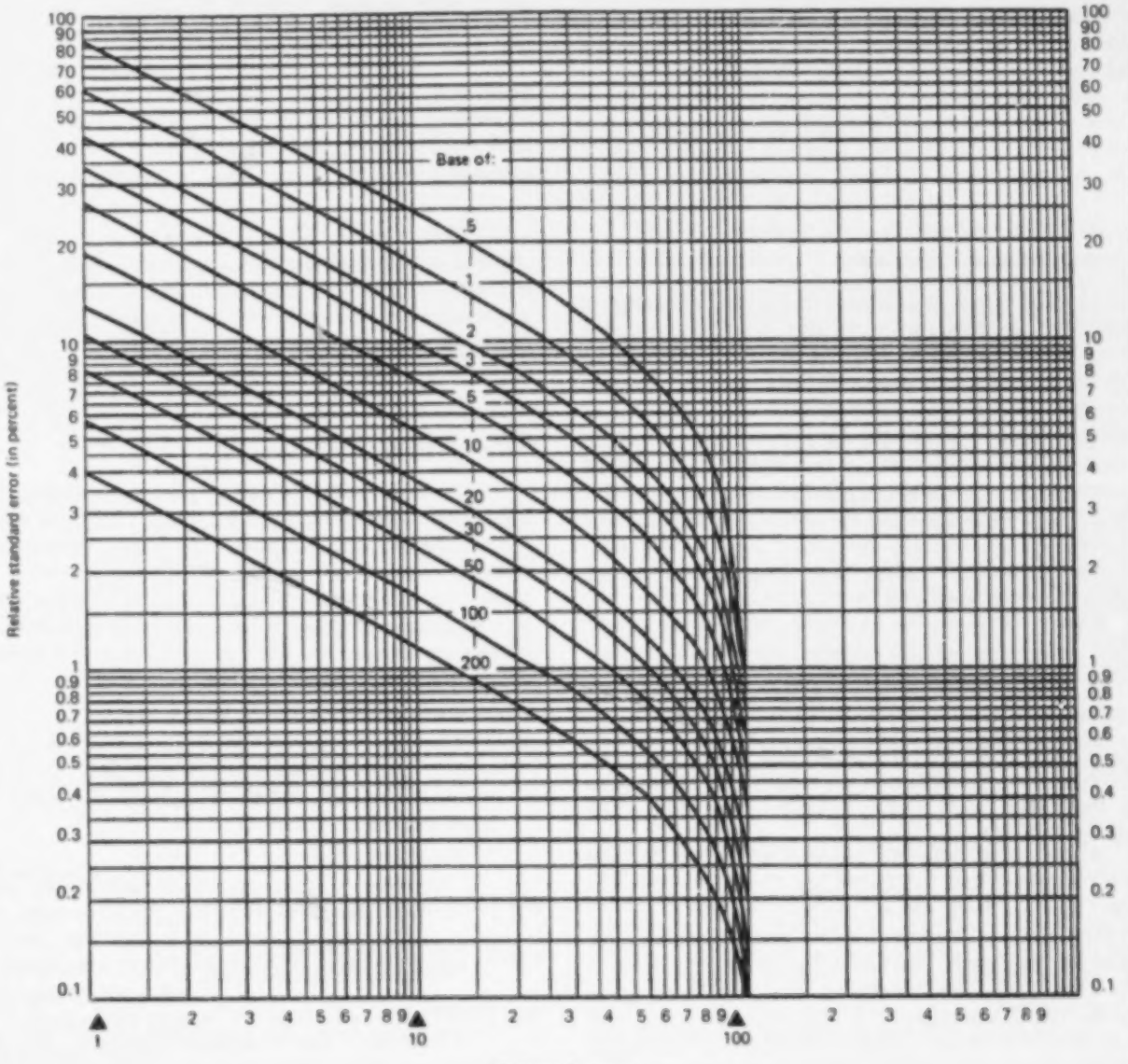


[1]This curve represents estimates of relative standard errors based on 4 quarters of data collection for narrow range estimates of population characteristics or narrow range estimates using a 12-month period.

Example of use of chart: An estimate of 10,000,000 persons with annual family income of $15,000 or more, or 10,000,000 persons who were hospitalized one or more times in the past year (on scale at bottom of chart) has a relative standard error of 1.7 percent (read from scale at left side of chart), or a standard error of 170,000 (1.7 percent of 10,000,000).

Figure I. Relative standard errors for population characteristics[1]

standard error quite accurately for the difference between separate and uncorrelated characteristics although it is only a rough approximation in most other cases. The relative standard error of each estimate involved in such a difference can be determined by one of the four rules above, whichever is appropriate.



[1] These curves represent estimates of relative standard errors of percents of population characteristics based on 4 quarters of data collection for narrow range estimates.

Example of use of chart: An estimate of 20 percent (on scale at bottom of chart) based on an estimate of 10,000,000 has a relative standard error of 3.6 percent (read from the scale at the left side of chart), the point at which the curve for a base of 10,000,000 intersects the vertical line for 20 percent. The standard error in percentage points is equal to 20 percent X 3.6 percent, or 0.72 percentage points.

Figure II. Relative standard errors of percents of population characteristics[1]

[Base of percent shown on curves in millions]

Appendix II. Definitions of certain terms used in this report

Terms relating to conditions

Condition.—A morbidity condition, or simply a condition, is any entry on the questionnaire that describes a departure from a state of physical or mental well-being. It results from a positive response to one of a series of "medical-disability impact" or "illness recall" questions. In the coding and tabulating process, conditions are selected or classified according to a number of criteria (such as whether they were medically attended, whether they resulted in disability, or whether they were acute or chronic) or according to the type of disease, injury, impairment, or symptom reported. For the purposes of each published report or set of tables, only those conditions recorded on the questionnaire that satisfy certain stated criteria are included.

Conditions except impairments are classified by type according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States,*[16] with certain modifications adopted to make the code more suitable for a household interview survey.

Acute condition.—An acute condition is defined as a condition that has lasted less than 3 months and that has involved either medical attention or restricted activity. Because of the procedures used to estimate incidence, the acute conditions included in this report are the conditions that had their onset during the 2 weeks prior to the interview week and that involved either medical attention or restricted activity during the 2-week period. However, excluded are some conditions that are always classified as chronic even though the onset occurred within 3 months prior to the week of the interview. The codes refer to the *Ninth Revision International Classification of Diseases,* as modified by the NHIS Medical Coding Manual.

Acute condition groups.—In this report all tables with data classified by type of condition employ a five-category regrouping plus several selected subgroups.

Chronic condition.—A condition is considered chronic if (1) the condition is described by the respondent as having been first noticed more than 3 months before the week of the interview, or (2) it is one of the conditions that are always classified as chronic by NHIS regardless of the date of onset.

Terms relating to disability

Chronic activity limitation.—Persons are classified into four categories according to the extent to which their activities are limited at present as a result of chronic conditions. Since the usual activities of preschool children, school-age children, housewives, and workers and other persons differ, a different set of criteria is used for each group. There is a general similarity among them, however, as will be seen in the following descriptions of the four categories:

1. *Persons unable to carry on major activity for their group* (major activity refers to ability to work, keep house, or engage in school or preschool activities)

   Preschool children:
   Inability to take part in ordinary play with other children.

   School-age children:
   Inability to go to school.

   Housewives:
   Inability to do any housework.

   Workers and all other persons:
   Inability to work at a job or business.

2. *Persons limited in amount or kind of major activity performed* (major activity refers to ability to work, keep house, or engage in school or preschool activities)

   Preschool children:
   Limited in amount or kind of play with other children, e.g., need special rest periods, cannot play strenuous games, or cannot play for long periods at a time.

School-age children:

Limited to certain types of schools or in school attendance, e.g., need special schools or special teaching or cannot go to school full time or for long periods at a time.

Housewives:

Limited in amount or kind of housework, e.g., cannot lift children, wash or iron, or do housework for long periods at a time.

Workers and all other persons:

Limited in amount or kind of work, e.g., need special working aids or special rest periods at work, cannot work full time or for long periods at a time, or cannot do strenuous work.

3. *Persons not limited in major activity but otherwise limited* (major activity refers to ability to work, keep house, or engage in school activities)

Preschool children:

Not classified in this category.

School-age children:

Not limited in going to school but limited in participation in athletics or other extracurricular activities.

Housewives:

Not limited in housework but limited in other activities such as church, clubs, hobbies, civic projects, or shopping.

Workers and all other persons:

Not limited in regular work activities but limited in other activities such as church, clubs, hobbies, civic projects, sports, or games.

4. *Persons not limited in activities* (includes persons whose activities are not limited in any of the ways described above)

Demographic terms

Age.—The age recorded for each person is the age at last birthday. Age is recorded in single years and grouped in a variety of distributions depending on the purpose of the table.

Race.—The population is divided into three racial groups, "white," "black," and "all other." "All other" includes American Indian, Chinese, Japanese, and any other race. Mexican persons are included with "white" unless definitely known to be Indian or of another race.

Income of family or of unrelated individuals.—Each member of a family is classified according to the total income of the family of which he or she is a member. Within the household all persons related to each other by blood, marriage, or adoption constitute a family. Unrelated individuals are classified according to their own income.

The income recorded is the total of all income received by members of the family (or by an unrelated individual) in the 12-month period preceding the week of the interview. Income from all sources is included, e.g., wages, salaries, rents from property, pensions, and help from relatives.

Education.—The categories of education status show the years of school completed. Only years completed in regular schools, where persons are given a formal education, are included. A "regular" school is one that advances a person toward an elementary or high school diploma or a college, university, or professional school degree. Thus education in vocational, trade, or business schools outside the regular school system is not counted in determining the highest grade of school completed.

Unrelated individuals are classified according to their own education.

Usual activity.—All persons in the population are classified according to their usual activity during the 12-month period prior to the week of the interview. The "usual" activity, in case more than one is reported, is the one at which the person spent the most time during the 12-month period. Children under 6 years of age are classified as "preschool." All persons aged 6-16 years are classified as "school age."

The categories of usual activity used in this report for persons aged 17 years and over are *usually working, usually going to school, usually keeping house, retired,* and *other activity.* For several reasons these categories are not comparable with somewhat similarly named categories in official Federal labor force statistics. First, the responses concerning usual activity are accepted without detailed questioning, since the objective of the question is not to estimate the numbers of persons in labor force categories but to identify crudely certain population groups that may have differing health problems. Second, the figures represent the usual activity status over the period of an entire year, whereas official labor force statistics relate to a much shorter period, usually 1 week. Third, the minimum age for usually working persons is 17 in the Health Interview Survey, and the official labor force categories include all persons aged 14 or older. Finally, in the definitions of the following specific categories, certain marginal groups are classified differently to simplify procedures.

Usually working includes persons 17 years of age or older who are paid employees; self-employed in their own business, profession, or in farming; or unpaid employees in a family business or farm. Work around the house or volunteer or unpaid work such as for a church is not counted as working.

Usually going to school includes persons 17 years of age or older whose major activity is going to school.

Usually keeping house includes female persons 17 years of age or older whose major activity is described

as "keeping house" and who cannot be classified as "working."

Retired includes persons 45 years old and over who consider themselves retired. In case of doubt, a person 45 years of age or older is counted as retired if he or she has either voluntarily or involuntarily stopped working, is not looking for work, and is not described as "keeping house." A retired person may or may not be able to work.

Other activity includes all persons 17 years of age or older not classified as "working," "retired," or "going to school," and females 17 years of age or older not classified as "keeping house."

Geographic region.—For the purpose of classifying the population by geographic area, the States are grouped into four regions that correspond to those used by the U.S. Bureau of the Census as follows:

Region	*States included*
Northeast	Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania.
North Central	Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, and Missouri.
South	Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Arkansas.
West	Washington, Oregon, California, Nevada, New Mexico, Arizona, Texas, Oklahoma, Kansas, Nebraska, North Dakota, South Dakota, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii.

Place of residence.—The place of residence of a member of the civilian noninstitutionalized population is classified as inside a standard metropolitan statistical area (SMSA) or outside an SMSA and either farm or nonfarm.

Standard metropolitan statistical areas.—The definitions and titles of SMSA's are established by the U.S. Office of Management and Budget with the advice of the Federal Committee on Standard Metropolitan Statistical Areas. Generally speaking an SMSA consists of a county or group of counties containing at least one city (or twin cities) having a population of 50,000 or more plus adjacent counties that are metropolitan in character and are economically and socially integrated with the central city. In New England, towns and cities rather than counties are the units used in defining SMSA's. There is no limit to the number of adjacent counties included in the SMSA as long as they are integrated with the central city, nor is an SMSA limited to a single State; boundaries may cross State lines. The metropolitan population in this report is based on SMSA's as defined in the 1970 census and does not include any subsequent additions or changes.

Central city of an SMSA.—The largest city in an SMSA is always a central city. One or two additional cities may be secondary central cities in the SMSA on the basis of one of the following criteria:

A. The additional city or cities must have a population of one-third or more of that of the largest city and a minimum population of 25,000.

B. The additional city or cities must have at least 250,000 inhabitants.

Not central city of an SMSA.—This includes all of the SMSA that is not part of the central city itself.

Not in SMSA.—This includes all other places in the country.

Appendix III. Relevant questions from the 1977 questionnaire

Ages 17+	19a. **What was -- doing MOST OF THE PAST 12 MONTHS** – (For males): **working or doing something else?** (For females): **keeping house, working, or doing something else?** If "something else," ask: b. **What was -- doing?** If 45+ years and was not "working," "keeping house," or "going to school," ask: c. **Is -- retired?** d. If "retired," ask: **Did he retire because of his health?**	19. & 20.	1 ☐ Working *(24a)* 2 ☐ Keeping house *(24b)* 3 ☐ Retired, health *(23)* 4 ☐ Retired, other *(23)* 5 ☐ Going to school *(26)* 6 ☐ 17+ something else *(23)* 7 ☐ 6–16 something else *(25)*
Ages 6–16	20a. **What was -- doing MOST OF THE PAST 12 MONTHS – going to school or doing something else?** If "something else," ask: b. **What was -- doing?**		
Ages under 6			0 ☐ 1–5 years *(21)* 0 ☐ Under 1 *(22)*
21a. **Is -- able to** *take part at all in ordinary play* **with other children?**		21a.	Y 1 N *(28)*
b. **Is he limited** *in the kind of play he can do* **because of his health?**		b.	2 Y *(28)* N
c. **Is he limited** *in the amount of play* **because of his health?**		c.	2 Y *(28)* N *(27)*
22a. **Is -- limited in any way because of his health?**		22a.	1 Y 5 N *(NP)*
b. **In what way is he limited?** Record limitation, not condition.		b.	_____ *(28)*
23a. **Does -- health now keep him from working?**		23a.	1 Y *(28)* N
b. **Is he limited** *in the kind of work he could do* **because of his health?**		b.	2 Y *(28)* N
c. **Is he limited** *in the amount of work he could do* **because of his health?**		c.	2 Y *(28)* N
d. **Is he limited** *in the kind or amount of other activities* **because of his health?**		d.	3 Y *(28)* N *(27)*
24a. **Does -- NOW have a job?**		24a.	Y *(24c)* N
b. **In terms of health, is -- NOW able to** *(work – keep house)* **at all?**		b.	Y 1 N *(28)*
c. **Is he limited** *in the kind of (work – housework) he can do* **because of his health?**		c.	2 Y *(28)* N
d. **Is he limited** *in the amount of (work – housework) he can do* **because of his health?**		d.	2 Y *(28)* N
e. **Is he limited** *in the kind or amount of other activities* **because of his health?**		e.	3 Y *(28)* N *(27)*
25. **In terms of health would -- be able to** *go to school?*		25.	Y 1 N *(28)*
26a. **Does (would) -- have to go to a certain type of school because of his health?**		26a.	2 Y *(28)* N
b. **Is he (would he be) limited** *in school attendance* **because of his health?**		b.	2 Y *(28)* N
c. **Is he limited** *in the kind or amount of other activities* **because of his health?**		c.	3 Y *(28)* N
27a. **Is -- limited in ANY WAY because of a disability or health?**		27a.	4 Y 5 N *(NP)*
b. **In what way is he limited?** Record limitation, not condition.		b.	_____
28a. **About how long has he** { **been limited in --** / **been unable to --** / **had to go to a certain type of school?** }		28a.	000 ☐ Less than 1 month 1 ____ Mos. 2 ____ Yrs.
b. **What (other) condition causes this limitation?** If "old age" only, ask: **Is this limitation caused by any specific condition?**		b.	*Enter condition in item C* Mark D box, THEN 28c ☐ Old age only, Mark D box, THEN *(NP)*
c. **Is this limitation caused by any other condition?**		c.	Y *(Reask 28b and c)* N
Mark box or ask: d. **Which of these conditions would you say is the MAIN cause of his limitation?**		d.	☐ Only 1 condition _____ Enter main condition

29a. Was -- a patient in a hospital at any time since (date) a year ago?	29a.	Y N *(Item C)*
b. How many times was -- in a hospital since (date) a year ago?	b.	____ Times *(Item C)*
30a. Was anyone in the family in a nursing home, convalescent home, or similar place since (date) a year ago? Y N *(31)*		
b. Who was this? – Circle "Y" in person's column.	30b.	Y
If "Y," ask: **c. During that period, how many times was -- in a nursing home or similar place?**	c.	____ Times *(Item C)*
Ask for each child 1 year old or under if date of birth is on or after reference date. **31a. Was -- born in a hospital?** If "Yes," and no hospitalizations entered in his and/or mother's column, enter "1" in 29b and item C. If "Yes," and a hospitalization is entered for the mother and/or baby, ask 31b for each.	31a.	Y N *(NP)*
b. Is this hospitalization included in the number you gave me for --? If "No," correct entries in 29 and item C for mother and/or baby.	b.	Y N

32a. Does anyone in the family (you, your --, etc.) NOW have –

If "Yes," ask 32b and c

b. Who is this? – Enter name of condition and letter of line where reported in appropriate person's column in item C.

c. Does anyone else have . . . ?

A.	**Deafness in one or both ears?**	**H.**	**A detached retina or any other condition of the retina?**
B.	**Any other trouble hearing with one or both ears?**	**I.**	**Any other trouble seeing with one or both eyes even when wearing glasses?**
C.	**Tinnitus or ringing in the ears?**	**J.**	**A cleft palate or harelip?**
D.	**Blindness in one or both eyes?**	**K.**	**Stammering or stuttering?**
E.	**Cataracts?**	**L.**	**Any other speech defect?**
F.	**Glaucoma?**	**M.**	**A missing finger, hand, or arm, toe, foot, or leg?**
G.	**Color blindness?**	**N.**	**A missing (breast), kidney or lung?**

33a. Does anyone in the family use –

If "Yes," ask 33b and c

b. Who is this? Mark box in person's column

c. Anyone else?

1. Eyeglasses?	
2. Contact lenses?	
3. A hearing aid?	

For "hearing aid," with no hearing problem reported, enter "33, (B), hearing trouble," in item C2

33b. 1 ☐ Eyeglasses
2 ☐ Contact lenses
3 ☐ Hearing aid *(Item C)*

34. Compared to other persons --'s age, would you say that his health is excellent, good, fair, or poor? 34. (1)
1 E 2 G 3 F 4 P

R Q's 4–34

For persons 17 years or over, show who responded for (or was present during the asking of) Questions 4–34.

If persons responded for self, show whether entirely or partly. For persons under 17 show who responded for them.

R
1 ☐ Responded for self-entirely
2 ☐ Responded for self-partly
Person____was repondent.

CONDITION 2

1. **Person number** | **Name of condition**

2. **When did -- last see or talk to a doctor about his . . .?**

1 ☐ In interview week (Reask 2)
1 ☐ Past 2 wks. (Item C)
2 ☐ 2 wks.–6 mos.
3 ☐ Over 6–12 mos.
4 ☐ 1 yr.
5 ☐ 2–4 yrs.
6 ☐ 5+ yrs.
7 ☐ Never
8 ☐ DK if Dr. seen
9 ☐ DK when Dr. seen

A1 Examine "Name of condition" entry and mark
☐ Color blindness (NC) ☐ On Card C (A2)
☐ Accident or injury (A2) ☐ Neither (3a)

If "Doctor not talked to," transcribe entry from item 1.
If "Doctor talked to," ask:

3a. **What did the doctor say it was? – Did he give it a medical name?**

Do not ask for Cancer ☐ On Card C (A2)

b. **What was the cause of . . .?**
☐ Accident or injury (A2)

If the entry in 3a or 3b includes the words:

Ailment	Condition	Disorder	Trouble	Ask c:
Anemia	Cyst	Growth	Tumor	
Asthma	Defect	Measles	Ulcer	
Attack	Disease	Rupture		

c. **What kind of . . . is it?**

For allergy or stroke, ask:

d. **How does the allergy (stroke) affect him?**

If in 3a–d there is an impairment or any of the following entries:

Abscess	Damage	Paralysis	Ask e:
Ache (except head or ear)	Growth	Rupture	
Bleeding	Hemorrhage	Sore	
Blood clot	Infection	Soreness	
Boil	Inflammation	Tumor	
Cancer	Neuralgia	Ulcer	
Cramps (except menstrual)	Neuritis	Varicose veins	
Cyst	Pain	Weak	
	Palsy	Weakness	

e. **What part of the body is affected?**

Show the following detail:

Head . . . . . skull, scalp, face
Back/spine/vertebra . . . . . upper, middle, lower
Ear or eye . . . . . one or both
Arm . . . . . one or both; shoulder, upper, elbow, lower, wrist, hand
Leg . . . . . one or both; hip, upper, knee, lower, ankle, foot

A2 Ask remaining questions as appropriate for the condition entered in:
1 ☐ Item 1 3 ☐ Q. 3b 5 ☐ Q. 3d
2 ☐ Q. 3a 4 ☐ Q. 3c 6 ☐ Q. 3e

4. **During the past 2 weeks, did his . . . cause him to cut down on the things he usually does?** 1 Y 2 N (9)

5. **During that period, how many days did he cut down for as much as a day?** ____ Days; 00 ☐ None (9)

6. **During that 2-week period, how many days did his . . . keep him in bed all or most of the day?** ____ Days; 00 ☐ None

Ask if 17+ years:
7. **How many days did his . . . keep him from work during that 2-week period? (For females): not counting work around the house?** ____ Days (9); 00 ☐ None (9)

Ask if 6–16 years:
8. **How many days did his . . . keep him from school during that 2-week period?** ____ Days; 00 ☐ None

9. **When did -- first notice his . . .?**
1 ☐ Last week
2 ☐ Week before
3 ☐ Past 2 weeks–DK which
4 ☐ 2 weeks–3 months
5 ☐ Over 3–12 months
6 ☐ More than 12 months ago
(Was it during the past 12 months or before that time?)
(Was it during the past 3 months or before that time?)
(Was it during the past 2 weeks or before that time?)

A3
1 ☐ Not an eye cond. (AA)
2 ☐ First eye cond. (under 6) (10g)
3 ☐ First eye cond. (6+ yrs.) (10)
4 ☐ Not first eye cond. (AA)

These next questions are about how well -- can see (with glasses/contacts).

10a. **Can -- see well enough to read ordinary newspaper print with his left eye?** 1 Y 2 N
his right eye? 1 Y 2 N

b. **Can -- see well enough to recognize the features of people he knows if they are close enough?** 1 Y 2 N

c. **Can -- see moving objects, such as cars moving or people walking?** 1 Y 2 N

d. **Can -- see well enough to step down?** 1 Y 2 N

e. **Can -- see well enough to recognize a friend walking on the other side of the street?** 1 Y 2 N

If ALL "No," ask 10f; otherwise go to 10g.

f. **Can -- see well enough to tell if a light is on?** 1 Y (AA) 2 N (AA)

g. **How much trouble would you say that -- has in seeing, a great deal, some, or hardly any at all?**
1 ☐ Great deal
2 ☐ Some
3 ☐ Hardly any or none
8 ☐ Other – Specify _____

AA

1 ☐ Missing extremity (A4)
2 ☐ Condition in C2 does not have a letter as source (A4)
3 ☐ Condition in C2 has a letter as source, Doctor seen (11)
4 ☐ Condition in C2 has a letter as source, Doctor not seen (15)

11a. Does -- NOW take any medicine or treatment for his . . .? 1 Y 2 N (12)

b. Was any of this medicine or treatment recommended by a doctor? 1 Y 2 N

12. Has he ever had surgery for this condition? 1 Y 2 N

13. Was he ever hospitalized for this condition? 1 Y 2 N

14. During the past 12 months, about how many times has -- seen or talked to a doctor about his . . .?
(Do not count visits while a patient in a hospital.) ____ Times 000 ☐ None

15a. About how many days during the past 12 months has this condition kept him in bed all or most of the day? ____ Days 000 ☐ None

Ask if 17+ years:

b. About how many days during the past 12 months has this condition kept him from work?
For females: **Not counting work around the house?** ____ Days 000 ☐ None

16a. How often does his . . . bother him -- all of the time, often, once in a while, or never?
1 ☐ All the time 2 ☐ Often 3 ☐ Once in a while
0 ☐ Never (A4) 8 ☐ Other -- Specify _____

b. When it does bother him, is he bothered a great deal, some, or very little?
1 ☐ Great deal 2 ☐ Some 3 ☐ Very little
4 ☐ Other -- Specify _____

FOOTNOTES

A4

☐ Accident or injury ☐ Other (NC)

17a. Did the accident happen during the past 2 years or before that time?
☐ During the past 2 years ☐ Before 2 years (18a)

b. When did the accident happen?
☐ Last week ☐ Over 3–12 months
☐ Week before ☐ 1–2 years
☐ 2 weeks–3 months

18a. At the time of the accident what part of the body was hurt?
What kind of injury was it? Anything else?

Part(s) of body	Kind of injury

If accident happened more than 3 months ago, ask:

b. What part of the body is affected now?
How is his -- affected? Is he affected in any other way?

Part(s) of body	Present effects

19. Where did the accident happen?
1 ☐ At home (inside house)
2 ☐ At home (adjacent premises)
3 ☐ Street and highway (includes roadway and public sidewalk)
4 ☐ Farm
5 ☐ Industrial place (includes premises)
6 ☐ School (includes premises)
7 ☐ Place of recreation and sports, except at school
8 ☐ Other -- Specify _____

20. Was -- at work at his job or business when the accident happened?
1 Y 3 ☐ While in Armed Services
2 N 4 ☐ Under 17 at time of accident

21a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way? 1 Y 2 N (NC)

b. Was more than one vehicle involved? Y N

c. Was it (either one) moving at the time? 1 Y 2 N

HEARING SUPPLEMENT

R1 — [ ] No Hearing Problem *(NP)*
[ ] A, B, or 33 in C2 *(1–3)*

1. Has -- ever used a hearing aid?	1.	1 Y 2 N
(Hand Card H) Please look at this card – 2a. Which statement best describes --'s hearing in his LEFT ear (without a hearing aid)?	2a.	Good 1 [ ] · Little trouble 2 [ ] · Lot of trouble 3 [ ] · Deaf 4 [ ]
b. Which statement best describes --'s hearing in his RIGHT ear (without a hearing aid)?	b.	1 [ ] · 2 [ ] · 3 [ ] · 4 [ ]
If age 3+ , ask: 3a. (Without a hearing aid) Can -- usually **HEAR AND UNDERSTAND** what a person says without seeing his face if that person **WHISPERS** to him from across a quiet room?	3a.	[ ] Under 3 *(R2)* · 1 Y *(R2)* 2 N
b. (Without a hearing aid) Can -- usually **HEAR AND UNDERSTAND** what a person says without seeing his face if that person **TALKS IN A NORMAL VOICE** to him from across a quiet room?	b.	1 Y *(R2)* 2 N
c. (Without a hearing aid) Can -- usually **HEAR AND UNDERSTAND** what a person says without seeing his face if that person **SHOUTS** to him from across a quiet room?	c.	1 Y *(R2)* 2 N
d. (Without a hearing aid) Can -- usually **HEAR AND UNDERSTAND** a person if that person **SPEAKS LOUDLY** into his better ear?	d.	1 Y *(R2* 2 N
e. (Without a hearing aid) Can -- usually tell the sound of speech from other sounds and noises?	e.	1 Y *(R2)* 2 N
f. (Without a hearing aid) Can -- usually tell one kind of noise from another?	f.	1 Y *(R2)* 2 N
g. (Without a hearing aid) Can -- hear loud noises?	g.	1 Y 2 N

R2 Q.'s 1–3 — For persons 17 years old or over, show who responded for (or was present during the asking of) Q.'s 1–3. If persons responded for self, show whether entirely or partly. For persons under 17, show who responded for them.

R2 — 1 [ ] Responded for self-entirely · 2 [ ] Responded for self-partly · Person___was respondent

FOOTNOTES

If 17+, ask: **1a. What is the highest grade or year -- attended in school?**	1a.	☐ Under 17 *(NP)* 00 ☐ None *(2)* Elem: 1 2 3 4 5 6 7 8 High: 9 10 11 12 College: 1 2 3 4 5 6+
b. Did -- finish the -- grade (year)?	b.	1 Y 2 N
2a. Did -- ever serve in the Armed Forces of the United States?	2a.	1 Y 2 N *(3)*
b. When did he serve? Circle code in descending order of priority. Thus if person served in Vietnam and in Korea, circle VN. Vietnam Era (Aug. '64 to April '75) . . . . . VN Korean War (June '50–Jan. '55) . . . . . KW World War II (Sept. '40–July '47) . . . . . WWII World War I (April '17–Nov. '18) . . . . . WWI Post Vietnam (May '75 to present) . . . . . PVN Other Service (all other periods) . . . . . OS	b.	1 VN 5 PVN 2 KW 6 OS 3 WWII 9 DK 4 WWI
c. Does -- have a service connected disability?	c.	1 Y 2 N
3a. Did -- work at any time last week or the week before -- not counting work around the house?	3a.	1 Y *(4)* 2 N
b. Even though -- did not work during these 2 weeks, does he have a job or business?	b.	1 Y 2 N
c. Was he looking for work or on layoff from a job?	c.	1 Y 2 N *(4)*
d. Which -- looking for work or on layoff from a job?	d.	1 ☐ Looking 3 ☐ Both 2 ☐ Layoff
Ask for all persons with a "Yes" in 3a, b, or c. If "Yes" in 3c only, questions 4a through 4e apply to this person's LAST full-time civilian job.		
4a. For whom did -- work? Name of company, business, organization, or other employer	4a.	Employer
b. What kind of business or industry is this? For example, TV and radio manufacturing, retail shoe store, State Labor Dept., farm	b.	Industry
c. What kind of work was -- doing? For example, electrical engineer, stock clerk, typist, farmer	c.	Occupation
d. What were --'s most important activities or duties? For example, types, keeps account books, files, sells cars, operates printing press, finishes concrete	d.	Duties
Complete from entries in 4a–d; if not clear, ask: **e. Was -- on employee of PRIVATE company, business, or individual for wages, salary, or commission?** . . . . . P **-- a FEDERAL government employee?** . . . . . F **-- a STATE government employee?** . . . . . S **-- a LOCAL government employee?** . . . . . L **-- self-employed in OWN business, professional practice, or farm?** If not a farm, ask: **Is the business incorporated?** Yes . . . . . I No (or farm) . . . . . SE **-- working WITHOUT PAY in family business or farm?** . . . . . WP **-- NEVER WORKED** . . . . . NEV	e.	Class of worker 1 ☐ P 5 ☐ I 2 ☐ P 6 ☐ SE 3 ☐ S 7 ☐ WP 4 ☐ L 8 ☐ NEV

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